

Empowering communities to reduce the burden of diabetes and cardiovascular disease risk: lessons from the NIROGI Lanka project in Sri Lanka

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Abstract

In 2008, at the invitation of the Ministry of Health, the Sri Lanka Medical Association (SLMA), along with other partners developed a project called the National Initiative in Re-Organizing General diabetes care in Sri Lanka (NIROGI – means “wellness”). One of the three parallel components of the NIROGI project was a health promotion intervention in low-income urban settings. Representatives from 28 selected urban settings in Sri Lanka were engaged to generate processes to improve well-being and reduce risk factors associated with noncommunicable diseases, and to identify and address the determinants underlying these factors through collective action. After a slow start, activities spread to a total of 133 settings. Adoption of regular exercise, improved food habits and substantial reductions in BMI values were achieved in virtually all settings. Improved mental well-being and reduced alcohol and tobacco use were reported, but were less widespread. Rarer gains included better money management, less frequent quarrels and domestic conflicts, improved family well-being and community cohesiveness. The main underlying factors recognized and addressed were: time spent watching television, negative influences from within the community (discouraging initiatives to improve health), and “external” commercial influences, including advertising. The results provide support for community health activities implemented by members of the community itself, including the measurement of progress and impact. If the intervention is to be implemented through health sector staff, they will require initial training on how to encourage and improve the technical aspects of community initiatives while carefully avoiding the tendency to take control.

Introduction

The rising burden of disability and premature deaths due to noncommunicable diseases (NCDs) globally as well as in South-East Asia¹ calls for prevention strategies directed not only at individuals but also at communities and populations.^{2,3} The common modifiable risk factors underlying NCDs include an unhealthy diet, physical inactivity, tobacco and alcohol consumption and mental stress.⁴ Interventions must address different stages of the life cycle and involve all relevant sectors,^{5,6} while the public at the “grass-roots level” must also play an active role for preventive activities to be effective.^{1,7}

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Sri Lanka has undergone a major demographic and epidemiological transition over the past two decades. The country has a rapidly ageing population due to reductions in communicable diseases and maternal mortality, resulting from improved living conditions, nationwide immunization, and strong maternal and child health services. In parallel, Sri Lanka has experienced a rise in cardiovascular disease (CVD), diabetes, chronic respiratory disease and cancer, which have reached levels similar to those in high-income countries.⁸ One of the reasons for this phenomenon is the rapid urbanization of a vulnerable population, which remains unaware of the root causes or determinants of these conditions.

Recognizing the need, the Sri Lanka Medical Association (SLMA) formed the Diabetes Prevention Task Force (DPTF) in 2004 and engaged in advocacy with the Ministry of Health to adopt a national policy and response. In 2008, at the invitation of the Ministry, the DPTF and other health sector stakeholders developed a project that addressed identified priority areas called the National Initiative in Re-Organizing General diabetes care in Sri Lanka (NIROGI – meaning “wellness” in the local language), which was approved for funding by the World Diabetes Foundation. One of the three parallel components of the NIROGI project was a health promotion intervention in low-income urban settings. This was consistent with the recognition accorded to health promotion as a major strategy in implementation of the national NCD policy.

This report is intended primarily to outline the broad strategy used and advocate for its wider application.

Methods

The main objective of the community component was to prevent type 2 diabetes and CVD risk through a “health promotion” approach,^{9,10} which was particularly appropriate for a “settings” focus.¹¹

Relatively low-income urban settings were selected from two areas each looked after by a Medical Officer Health. These were Kotte and Kolonnawa, within the district of Colombo. A representative each from 10 schools (with 600–1000 students each), 10 workplaces (with 30–80 staff each) and 10 residential communities (of 100–500 households each) were invited to an inaugural workshop with members of the resource team (authors of this paper) and four trained health promotion facilitators selected for the intervention. The objectives, methodology and activities were discussed and jointly agreed upon. All 28 representatives who attended the workshop expressed interest in having the intervention implemented in their setting.

A trained health promotion facilitator visited each location to stimulate a process by means of questions, discussion and explanation of the potential for improved well-being through collective action. Anyone in the given setting who wished to participate in this health promotion initiative was welcome to attend these community-level meetings at each location. The facilitators visited the settings weekly during the first few weeks and gradually reduced the frequency of visits to around once a month or so, to provide regular inputs on technical matters. The frequency of visits was not rigidly laid down and was responsive to the demand from each setting. The resource team held five formal reviews at a separate venue, with the participation of the original representatives and keen new volunteers from the selected settings, along with the facilitators.

The intervention was designed primarily to empower members of the local communities to implement, monitor and evaluate their own efforts.^{12,13} Placing control in the hands of the people concerned was accorded higher priority than conforming to a rigid research methodology. It was felt

that such an approach, even if it was difficult at the start, was likely to create lasting and sustained improvements. The tasks of monitoring progress and assessing impact were also therefore shifted to members of the different settings. The trained facilitators provided feedback on the quality of the proposed actions, the determinants identified and the indicators chosen for assessing progress. Such feedback was provided as suggestions that people in the various settings or communities could accept or reject and not as “technical expertise” conveyed with authority.

Records maintained by the facilitators included assessments of progress by community members in each setting. How interested they were, how well they recognized the benefits of collective action and how perceptively they selected the determinants to be addressed were subjectively rated by the facilitators. Facilitators discussed, in reviews with some of the resource team members, how these assessments could be made increasingly reliable and valid. As “grass-roots” understanding of the required process grew, measurement of change was progressively shifted to community members in each setting. Measurement was complex, as “outcomes” or determinants of the desired final end-point were also assessed. In efforts to reduce excess body weight, for instance, they learnt to record changes in individual body weight as well as shifts in the selected determinants. The determinants addressed may have included the availability and cost of different food items, the ability to overcome the desire to watch favourite programmes on television or handle negative or hostile reactions of others who constantly discouraged them or made fun of their endeavours.

Action in most communities began with regular shared exercise or games. As things progressed, the more successful communities broadened the focus to include other factors such as diet, tobacco and alcohol use, and mental well-being. With regard to these too, the ongoing data recorded by members of the settings and the facilitators were collected and classified under the headings of *process*, *outcome* and *impact*. “Impact” here referred to the desired changes in diet, body weight, and use of tobacco and alcohol. “Outcomes” referred to determinants they chose to address, such as vulnerability to commercial promotions, availability and price of different foods, or attitudes to women exercising or playing games in public grounds.

Formal research, which was outside the control of the populations involved, was not part of the original plan. However, an independent evaluation became feasible after the intervention ended. A post-intervention evaluation was therefore conducted¹⁴ with the consent of members of the participating communities by an academic in the medical faculty, although this had not been envisaged at the beginning.

Results

The results were collected and reported by individuals from each setting. These were supplemented and validated by the trained field facilitators, and analysed and classified by the resource team together with the facilitators. This information was constantly shared with members of the communities involved.

A. Process aspects

(i) Ownership

The results assessed the change process itself. A highly desirable characteristic noted was that people in the given settings took charge of the process within a few months. Success was seen

mostly within residential communities, while only four of the original 10 schools invited succeeded in sustaining the initiative.

(ii) Spread

People in highly enthusiastic settings engaged new, “secondary” settings. A few instances were reported where the activity spread from the secondary settings as well. The eventual number of settings grew from the initial 28 to 133. The spontaneous spread of successful initiatives occurred mostly in residential community settings. The formal evaluation found that 101 settings were “functional” in maintaining their health-related initiatives in a visible and organized way (Table 1). Most of these were communities (83) and workplaces (14).

Table 1. Functioning of settings at the end of the intervention

Setting	Type of setting	Functioning setting		Total
		Kotte area	Kolon-nawa area	
Workplaces	Highly functioning	0	4	04
	Moderately functioning	8	2	10
	Not functioning	5	4	09
	<i>Sub total (functioning settings /total)</i>	<i>08 /13</i>	<i>06 /10</i>	<i>14 /23</i>
Schools	Highly functioning	0	1	01
	Moderately functioning	3	0	03
	Not functioning	2	4	06
	<i>Sub total (functioning settings /total)</i>	<i>03 /05</i>	<i>01/05</i>	<i>04 /10</i>
Communities	Highly functioning	8	3	11
	Moderately functioning	37	35	72
	Not functioning	9	8	17
	<i>Sub total (functioning settings/ total)</i>	<i>45/54</i>	<i>38/ 46</i>	<i>83/100</i>
Total functional settings / total		56/ 72	45/61	101/133

This spontaneous spread is one of the most powerful indicators of the spirit generated when people take charge of activities. Many members interviewed in the formal evaluation¹⁴ said that they were continuing to further spread the activities, which they had begun to enjoy.

(iii) Addressing the determinants of selected factors

Increased physical activity, better dietary habits and, to a lesser extent, subjective feelings of well-being and reduced consumption of alcohol and tobacco were achieved through a sustained process among members of the concerned communities. The evolving process included increasingly insightful discussions that helped them recognize, analyse and decide upon the main underlying determinants, and to figure out feasible ways to address these.

(iv) Measuring progress

Measuring changes in the determinants, and not merely in “end-points”, was a crucial technical feature that contributed to success. Members of the community proved capable of keeping relevant records of progress. Some of these indicators, such as body weights, time spent on physical activity and expenditure on tobacco and alcohol were quantitative. Changes in the selected determinants were also measured. The resultant feedback to the community by its own members was a powerful contributor to improving quality.

B. Outcomes

“Outcomes” referred to changes in the underlying contributors to the targeted factors – body mass, exercise, diet, tobacco and alcohol use, and mental well-being. Initial discussions guided attention to the underlying causes or determinants of these factors. An example of a determinant that changed was the liberation of community members from the hold of television – especially of some TV serials to which they were previously “addicted”. The reduction in time spent watching TV was not only documented numerically but was also presented in charts maintained in some settings.

Influences within the group and negative or hostile comments by some members of the wider community were other determinants addressed. Encouraging others to join in regular games and exercise, and working out collective ways to deal with negative comments were among the responses that emerged. In some settings, there were objections by older males to women exercising or playing games in public grounds. Some women, who initially discouraged their peers, joined in the exercise programmes later when they began to see visible improvements in body shape and high energy levels of those who exercised regularly.

Reported reductions in the number of quarrels and conflicts within the household, improved family well-being and increased savings were among the other improvements documented. Some of these may be considered associations rather than outcomes.

C. Impacts

A proper quantitative measurement of changes in risk factor status in different settings was not planned and therefore cannot be presented. The improvements documented within communities cannot meaningfully be presented as a percentage of the population involved, because the denominator is indefinite in an intervention targeting an ill-defined community through random individual volunteers. Noteworthy reductions in excess body weight among those reached were documented in all active settings, and are continuing. Major changes in dietary practices and exercise were also documented to be widespread. Reductions in tobacco and alcohol use were reported in fewer settings – around 15% – while improvements in subjective well-being were also noted.

Associated benefits, not directly related to the risk factors addressed, were sporadic reports of improved family harmony, financial management and community cohesiveness. The process continues autonomously because the relevant insights and activities are now incorporated into the day-to-day lives of the given families and communities.

The results of the independent post-intervention evaluation are not included in this report. That study, outside the control of the present authors, led to the conclusion, “...*the programme could be*

used as a low cost model for empowering communities in the prevention of non-communicable diseases".¹⁴

Discussion

This report is intended primarily to draw attention to the lessons that can be learnt and the potential for implementing cost-beneficial interventions using a health promotion strategy.

Assessing the benefits of health promotion and other community-based interventions is complex. The customary double-blind controlled trial design that applies to clinical research is often held up, mistakenly, as the "gold standard" for field research and assessment of policy intervention. The appropriate models and indicators for policy or community intervention need to be very different and designed according to the purpose and circumstances.¹³

Measurement of results by people in the given settings is itself a positive product of this activity. Improved capacity of a community to assess progress, and be guided by what it finds, is a highly desirable product. This counts as a major lesson learnt. We find adequate support for several such tentative lessons that deserve wider application. There is of course room to improve and test these more stringently, now using methods closer to strict "experimental" design.

A. Potential lessons

The potential lessons are many, four of which are listed here.

- (1) People can successfully make their lives healthier through collective action. The initial time and effort spent to stimulate them to take charge is worthwhile. External inputs are not needed indefinitely to sustain progress when this happens.
- (2) It was found to be necessary but not sufficient for people to take ownership of their health. External facilitation was also required to provide suggestions on how the determinants of the selected goals may be worked out accurately and how they could be addressed effectively. The benefit of regular inputs by competent facilitators was well demonstrated in this intervention.
- (3) An incidental discovery was that some health sector staff found it difficult to hand over control of planning, implementation and measurement of progress to lay people. Most health sector staff may need some extra training to encourage members of communities to take the lead in health interventions. Once acquired, this ability enables health workers to function as powerful agents of change.
- (4) Better results are probably achieved when the people concerned take on the task of measuring progress as well. Enthusiastic individuals in the given settings quickly learnt how to develop their own indicators to examine whether the desired results were being achieved. Assessing changes in the determinants addressed helped them discover whether they were on track early enough to take remedial measures, when required.

B. Practical implications

Too many small-scale experimental interventions are forgotten or ignored because of failure to popularize the methodology used or its core strategy. Although publication of results in scientific journals is touted as the best route of dissemination, this may not always be the case. The content of

most “programmatic” activities is probably decided more on the basis of skilled advocacy than on evidence of the effectiveness or cost benefit.

Disseminating lessons from small-scale experiments is not easy. Encouraging results do not necessarily lead to calls for the successful action to be disseminated widely. And when any seemingly promising strategy is applied more widely, as rarely does happen, the successful intervention may not live up to the promise that its originators claimed. One reason for this failure is that the core features that underlie success are not emphasized and preserved during the wider application. Thus, the activity is applied incompletely or inaccurately, and the key ingredients of success are lost.

The ingredients contributing to the promising results of this intervention are common to many health promotional interventions. The growing evidence on the benefits of using these in efforts to improve cardiac health or prevent NCDs² suggests that the health sector would do well to advocate strongly for incorporating such efforts.

Several “natural” or understandable obstacles need to be addressed if we wish to take promising “grass-roots” lessons to the programme level. A specific obstacle to dissemination that became evident through this intervention was the reluctance, especially initially, of professionals and authorities to trust the ordinary citizen or lay person to do things without an expert in charge.

We must take care to identify and preserve the core elements of any intervention that we want to implement on a wider scale. This small-scale experimental intervention reinforces the need to take into account the following considerations in implementing similar programmes aimed at creating sustained behaviour change in a community.

- People can bring about major improvements through changes in their own life settings.
- Working out and addressing the determinants of a desired behaviour enhances results.
- Continuous measurement of progress and redirecting activities improves efficiency.
- Changing behaviour is probably easier for a group than an individual.
- Disseminating the process requires mainly technology transfer and not expensive physical resources.
- Facilitators often need to learn new skills to spread the strategy.
- These skills are not difficult to acquire.

Results that awaken communities to what they are able to achieve are eventually “costless”. We must stimulate policy-makers and professionals to become aware of the huge potential of such initiatives.

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