STRATEGIES FOR HEALTH PROMOTION: FACING THE CHALLENGE IN SOUTH AFRICA

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Many health promotion intervention studies have been conducted with the goal of encouraging people to change their lifestyles. These include interventions in the community, at worksites, in a medical setting, and on patients at high risk of disease. These interventions have had, in general, a limited impact (eg, risk of heart disease is lowered by 5%–15%). These interventions were carried out in developed countries, and little is known as to their effectiveness in developing countries such as South Africa.

Numerous barriers impede the success of health promotion interventions, including the cost of healthy food, advertising for unhealthy food, and food labels that are confusing. Policy measures are proposed, including government interventions using taxes and subsidies so as to manipulate prices and bring about desirable changes in eating patterns and other aspects of lifestyle. A new type of healthcare professional is suggested with a specialization in health promotion. (*Ethn Dis*. 2007;17:749–754)

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INTRODUCTION

The discovery that many chronic diseases are preventable prompted the development of health promotion as an intervention strategy that aims to improve lifestyles and thence prevent chronic diseases. Almost all such work has been conducted in the developed world. In this paper, health promotion strategies are reviewed and proposals made concerning how the lessons from this can be applied to South Africa.

The health challenges of South Africa are very different from those facing developed countries. In particular, South Africa faces a major crisis with AIDS/HIV, as well as a high frequency of other infectious diseases and malnutrition. However, the focus here is on the prevention of chronic diseases, a subject of major importance in that country. For example, >50% of women and >20% of men are overweight (body mass index >25).[1] Among residents age 30–65 years from mixed ancestry community near Cape Town, the prevalence of type 2 diabetes was 10.8%.[2] There are also high rates for risk factors for cardiovascular disease. Most South Africans get an inadequate amount of exercise: 46% are inactive while a further 24% are minimally active.[3] The prevalence of smoking has decreased by approximately one fifth over the past decade. Nevertheless, smoking rates are still high: ≈24% among those aged >15 years.[4] The diet in South Africa also leaves much to be desired. For example, consumption of fruit and vegetables is well below recommended levels and appears to have hardly changed in the past 30 years.[5] Rapid urbanization of the Black population has lead to a sharp increase in intake of fat, saturated fat, and sugar.[5]

STRATEGIES FOR HEALTH PROMOTION

Much effort has been expended over the past 30 years to educate the public in developed countries as to the vital

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importance of good nutrition, exercise, and the avoidance of smoking and to encourage people to adopt a healthy lifestyle. But major behavior change at the population level has not been achieved. Clearly, most people are resistant to making radical changes in their lifestyles. There have been some notable success stories, such as the large decrease in the prevalence of smoking, especially among men, but successes in the areas of diet and exercise have been far more modest.

Various types of health promotion campaigns have been developed, most of them focused on risk factors for cardiovascular disease. More detailed reviews have been published elsewhere.[6,7] One strategy has been to target entire communities by means of the mass media along with various other methods, such as education through schools and supermarkets. Three major projects were carried out in the United States during the 1980s: the Stanford Five-City Project, the Minnesota Heart Health Program, and the Pawtucket Heart Health Program. Their aims were to lower elevated levels of blood cholesterol, blood pressure, and weight; to cut smoking rates; and to persuade more people to exercise. Despite great efforts, the degree of success of the three studies was meagre, and changes were not statistically significant. Indeed, the estimated risk of coronary heart disease was unchanged.[8]

These projects, and others that also achieved a poor degree of success, took place at a time when the American population was receiving information concerning the relationship between lifestyle and disease, even though this was little more than reports in the mass media and government policy pronouncements. This limited degree of health education was likely sufficient to persuade a significant minority of the population to adopt a healthier lifestyle; this helps explains why heart disease rates were falling at this time. A health promotion campaign superimposed on such secular trends may have little additional benefit. However, we cannot discount the possibility that different types of intervention might be successful where the above ones were not.

A successful community project for heart disease prevention was carried out in North Karelia, a region of eastern Finland with an exceptionally high rate of the disease.[9] This intervention, which centred on nutrition education, is of especial significance as it began in 1972, well before the general population began to receive health information on heart disease. Large numbers of people followed the health advice thereby causing a sharp fall in heart disease rates. This intensive educational campaign was then replicated across Finland leading to a national drop in heart disease rates.[10]

Two intervention projects carried out during the 1990s represent a radical departure from the strategy used in the above studies. Paid advertising was used as the major educational tool, with the goal of changing just one aspect of lifestyle rather than several. The population of an American city was encouraged to buy low-fat milk (skim or 1%) in place of whole milk.[11] Within a few weeks, sales of low-fat milk, as a proportion of total milk sales, increased from 29% to 46%. This remarkable success was achieved with a budget of less than $1 per person. An Australian study used paid advertising to persuade the population of a region to consume more fruit and vegetables.[12] This was also successful, with consumption increasing by 11% for fruit and by 17% for vegetables.

Clearly, the results of community intervention projects are highly variable and often disappointing. More research is required so that greater success can be achieved. However, it does appear that educational approaches at the community level often lead to favorable changes in lifestyle by at least part of the population. The evidence is suggestive that interventions focused on a small number of changes and using paid advertising can be especially successful.

Over the years, a number of health promotion interventions have been conducted at worksites. This strategy can be cost-effective over the short term (months or a few years), as healthier workers are likely to be more productive while sickness-related costs tend to decline.[13]

The Treatwell program in the United States encouraged employees to improve their diets. This resulted in a small decrease in fat intake (3%) but failed to raise intake of dietary fiber.[14] Subsequently, employees and their families were encouraged to eat more fruit and vegetables, and an increase of 0.5 servings per day was observed.[15] Another American intervention, The Healthy Worker Project, focused on smoking and weight control. Smoking rates were reduced by 2%, but no improvements were recorded for body weights.[16] Therefore, as with community intervention projects, lifestyle changes are positive but of a small magnitude.

Medical settings have often been used to deliver health education messages. This makes good sense since people are generally receptive to instructions given by health professionals. Two British randomized trials illustrate this approach. Nurses, based in the offices of family physicians, strove to persuade the target groups to make lifestyle changes to reduce their risk of cardiovascular disease. The OXCHECK study achieved small significant improvements in exercise participation, weight, dietary intake of saturated fat, and serum cholesterol, but was unsuccessful in decreasing smoking or excessive alcohol intake.[17,18] The Family Heart Study reported some modest lifestyle improvements, producing an estimated 12% reduction in the risk of heart disease.[19]

Similarly, modest changes were achieved in an American study. Personalized dietary recommendations, educational booklets, and a brief physician endorsement were sent to patients by mail, and they also received motivational counseling by phone. After three months the intervention group had increased its consumption of fruit and vegetables by 0.6 servings per day, but no change was observed in intake of

red meat or dairy products.[20] A limited degree of success is also seen when physicians advise patients to quit smoking: a small fraction do so.[21]

Wilcox and colleagues[22] reviewed 32 intervention studies carried out in a medical setting. They concluded that these interventions tend to produce small but statistically significant improvements for physical activity, dietary fat consumption, weight loss, blood pressure, and serum cholesterol. They commented that such changes are likely to be meaningful when considered from a public health perspective.

Some of the medical interventions have targeted patients at high risk of heart disease or other diseases. For example, Lindholm et al[23] in Sweden attempted to reduce the risk of cardiovascular disease in patients at relatively high risk. The subjects received either simple advice from their physician or intensive advice (five 90-minute sessions plus an all-day session). The intensive advice produced a modest decline in the risk of heart disease of ≈6%. Much greater success was reported from two randomized trials of patients at high risk of type 2 diabetes because they were overweight and had impaired glucose tolerance.[24 25] The interventions, one in Finland and one in the United States, were based on physical activity and dietary change. Both studies achieved an estimated risk reduction of about 58%; additionally, they were remarkably cost-effective.[26]

Interventions focused on high-risk subjects have generally been the most successful form of health promotion.[27] This strategy is also probably the most cost-effective form of intervention,[28] the reasons being that patients are generally more compliant and because the same risk factor reduction is more likely to prevent heart disease in high-risk subjects than in low-risk ones. But a strategy of targeting high-risk patients does have a serious flaw. Rose[29] pointed out that the 15% of men at "high risk" of heart disease account for only 32% of future cases. Therefore, in order to achieve a major impact on heart disease, it is necessary to target the entire population. This principle also applies to other diseases related to diet and lifestyle, such as stroke and cancer.

Overall, therefore, while some health promotion interventions that have encouraged people to change their lifestyles have achieved a moderate degree of success, and a very small number were highly successful, progress has mostly been of a low magnitude. This might be expected to lower rates of heart disease by 5%–15%. Such campaigns can certainly be a cost-effective way to improve lifestyles and favorably affect the health of large numbers of people. More research is required to determine how to improve the effectiveness of health promotion projects (eg, a focus on one lifestyle change rather than many or using paid advertising).

Few health promotion campaigns have been done in developing countries. The Coronary Risk Factor Study (CORIS) was a community intervention study in South Africa that aimed to reduce the prevalence of risk factors for CHD among White people who were following a European-type lifestyle. Intervention towns received education via the media, either with or without additional interventions focused on high-risk individuals.[30] The findings (based on comparisons of intervention towns and a control town) indicate that 1) the media intervention achieved a significant reduction in smoking, blood pressure, and total risk score; and 2) that the addition of the intervention targeting individuals at high risk achieved no additional benefit. This first phase lasted four years. At the end of an additional eight years of intervention, the town given only media intervention had a more favorable risk profile than did the control town, whereas the town given both types of intervention was now no different from the control town.[31]

These findings suggest a number of observations. The first – and more successful – part of the study occurred at a time (1979–1983) when few people had been educated as to the importance of a healthy lifestyle. This part of the study can therefore be likened to the study in North Karelia described above. The much weaker benefit that occurred during the second period (1983–1991) can be explained by the large amount of general health education that the target population was by then receiving. The results from CORIS are consistent with findings from Europe and North American and indicate, first, that in developing countries, such as South Africa, the entire population should receive basic health education, and, second, that once this has been done, additional health promotion campaigns can be predicted, at most, to modestly slow the advancing tide of chronic disease of lifestyle.

A major intervention was Soul City, targeting the entire population of South Africa.[32] This used television drama, a radio drama, and information booklets. Various issues were dealt with, including hypertension. Surveys indicate that exposure to Soul City is associated with positive change in knowledge of hypertension and in actual behavior change, namely, having one's blood pressure checked and in trying to adopt a healthier lifestyle. Another health promotion intervention carried out in South Africa was done in the small town of Mamre, whose inhabitants are of mixed ancestry. The aim of this uncontrolled study was to reduce smoking rates, and it appears to have been effective.[33] More research is needed in South Africa to determine the effectiveness of various health promotion strategies and to test and refine innovative new approaches.

BARRIERS TO HEALTHIER LIFESTYLES

Many factors influence people's lifestyle behavior besides concerns about how to protect health. People are often reluctant to change their lifestyle, especially when they have

been following it for many years and the change being advocated goes against fashion or peer pressure. Our attitudes are also shaped by social factors, such as housing, employment, income, and education. Our purchases in shops are strongly influenced by price and advertising. These factors can act as barriers to the adoption of a healthier lifestyle. We should not be surprised, therefore, when exhortations to individuals to lead a healthier lifestyle generate only modest change.

Additional barriers have been identified in townships in South Africa (ie, areas inhabited by Black people who almost all live in poverty). Barriers to engaging in exercise include crime, cultural beliefs, and lack of green areas and recreation facilities.[34] A study among overweight women reported that none desired to lose weight for health reasons, and they had little comprehension of the causes of being overweight or of effective remedies.[35]

GOVERNMENT POLICY AND HEALTH PROMOTION

Governments have the power to pass legislation and to manipulate prices using taxation and subsidies. Price changes can have a far greater impact than the health promotion interventions discussed earlier. This is certainly the case with smoking; it manifests ''price elasticity.''[36] Data from developed countries indicate that a 10% increase in the price of tobacco reduces consumption by ≈5%.[37] Price increases are therefore an effective means to reduce smoking rates, especially among those with the least money. For that reason, the impact of price increases is likely to be considerable among young people at around the age when the smoking habit starts. Likewise, price elasticity is greater in developing countries than in developed ones. In South Africa, a 10% price increase is projected to reduce consumption by ≈8%.[38]

Supermarkets apply price elasticity when they reduce the price of ripe fruit in order to sell it quickly. Jeffery, French, and colleagues in the United States provided strong evidence that reduced prices can be an effective tool for increasing the consumption of healthy foods. In one study they cut by half the price of low-fat snacks sold in vending machines in worskites and secondary schools, and this led to a 93% increase in sales of these foods.[39] In a worksite cafeteria, the price of fruit and salad items was cut in half while at the same time the range of items was broadened. Sales then rose three-fold.[40] Similar findings were made in a high school cafeteria.[41]

The price of foods tends to encourage poor nutritional choices over healthier ones. Analyses of food prices in the United States and France showed that energy-dense foods (foods with a high calorie content per gram) generally provide calories at a relatively low cost.[42,43] This is also the case in South Africa (unpublished observations). The result is that people on a restricted food budget are pressured to buy such foods as fatty meat, refined grains, and foods with added fat and sugar, rather than lean meat, fish, fresh vegetables, and fruit.

This evidence suggests that government policies concerning prices for food and tobacco may be an effective means to help bring about desirable changes in eating patterns and other aspects of lifestyle. In particular, taxes and subsidies can be viewed as means to persuade people to increase their intake of whole-grain cereals, fruit, and vegetables, while lowering consumption of less healthy choices, such as foods rich in fat and sugar. The sale of fruit juice could be encouraged over sugar-rich soft drinks and of low-fat meat over high-fat varieties.

Advertising is another factor that strongly affects people's food choices,[44] which is why the food industry spends so heavily on advertising. This advertising places little emphasis on healthy food choices. Food advertising directed at children is especially weighted toward foods high in fats, oils, and sugar and for fast-food restaurants, with little or no advertising for fruit and vegetables.[45] This is similarly the case in South Africa. Health promotion campaigns operate at an enormous disadvantage because their budgets are tiny compared to the amounts spent on the advertising of unhealthy foods. These findings indicate the need for government policies that regulate TV advertising for unhealthy food products, especially when the target audience is children.

Another barrier that obstructs consumers who may wish to follow a healthier diet is food labeling. In many countries, including South Africa, there have been serious efforts in recent years to make food labels more user-friendly, but there is room for improvement. For example, information on the content of sodium, fiber, and saturated fat is not written in a format that most people can comprehend. Language is an additional barrier for many people. Many foods (eg, fresh meat and restaurant food) have no labels. Government policy initiatives to improve food labels would help consumers more easily purchase healthier foods.

The public health policies proposed above can be viewed as a logical extension of those already in place. For example, the law on use of seat belts demonstrates how lives can be saved at little cost and with minimal intrusion into individual freedom. Likewise, lead pollution is another excellent illustration of what can be achieved by governmental action. Regulations implemented by the American government in the 1970s forced major reductions or removal of lead from gasoline and other products. As a result, there was a four-fold reduction in the average blood level of lead in American children over the following 20 years.[46,47] South Africa has now moved in that direction.

The issues of seat belt use and drunk driving illustrate that when legislation is implemented and the public is properly

educated, there is a high degree of acceptance. One major obstacle to the implementation of public health policies is resistance from industries that profit from unhealthy lifestyles. On countless occasions industries in developed countries have lobbied governments and spent freely in order to dilute or stop laws that threaten their profits. This has been especially the case with the food industry[48] and the tobacco industry. However, the experience with tobacco control in South Africa over the past decade shows that where a government is determined, then highly effective legislation can be passed.

But how much will policy approaches to health promotion cost? In most cases, the bill should be negligible. For example, governments could easily force food manufacturers to cut the salt content of food, an action that would be highly beneficial yet cost virtually nothing. If taxes and subsidies were realigned so that health became the top priority, this could be revenue-neutral. Extra spending in some areas, such as subsidies for healthy food choices, would be cancelled out by increased income in other areas, for example, higher taxes on cigarettes and sugar-rich soft drinks. With regard to chronic diseases of lifestyle, it seems highly probable that this strategy can improve the public health at a far lower cost than is achievable by most medical interventions, such as drug treatment of hypertension and hypercholesterolemia.

HEALTH PROMOTION AS A MEDICAL INTERVENTION

Let us now re-examine the question of the role of medical personnel in the delivery of health promotion. As was noted earlier, some intervention projects have been conducted at doctors' offices. The results have generally been modest though useful. Several barriers make it unlikely that health promotion in this setting will be significantly more successful. A major barrier is that physicians seldom have enough time, a barrier that is especially true in developing countries such as South Africa. In addition, physicians are seldom trained in this. Employing nurses in this role is one approach. A better solution may be a new class of healthcare professional with a specialization in health promotion. They would dispense advice across the whole lifestyle spectrum, including nutrition, exercise, smoking cessation, and avoidance of sexually transmitted diseases. Their training would include counseling skills to facilitate behavior modification.

THE TIME FOR ACTION IS NOW

While we have the knowledge that allows us to prevent most cases of chronic diseases, what is clearly lacking is a sufficient degree of committed action. What should be considered is a paradigm shift in approach to preventive health care. Hopefully, the ideas presented here will lead to new developments in health promotion. This must take place at two levels: first, at the level of health education and encouragement in communities, schools, worksites, and medical settings and, second, at the policy level.

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