Strategic initiatives to promote participation in physical activity

NEVILLE OWEN
Deakin University, Melbourne, Australia

SUMMARY
Future reductions in the overall burden of ill-health and premature death from cardiovascular disease are likely to follow from reductions in the proportions of the population who are physically inactive. More benefit is likely to be gained from activating the sedentary than from persuading those who are already active to become more active. Population studies of exercise behaviour from New Zealand, North America and Australia have found that 25–30% of adults are sedentary in their leisure time. Australia's National Health Goals and Targets are described as an example of recent initiatives in industrialised countries to increase physical activity levels on a population-wide basis. Evaluations of recent nationwide campaigns in Australia suggest the need for a realistic awareness of what can and cannot be achieved by mass-media information and persuasion to encourage sedentary people to be more active. Primary-health-care practitioners (particularly general practitioners and those educated in the exercise and sport sciences) have a key role to play in advising and encouraging sedentary people to be more active, particularly by focusing on each of the different stages of change in physical activity (precontemplation, contemplation, preparation, action and maintenance). Health-care practitioners should also be contributing to informed public debate not only by disseminating information on the benefits of a physically active lifestyle, but also by advocating for appropriate environmental and social changes which would encourage inactive people to be more active.

Key words: campaign; physical activity; population; stage of change

INTRODUCTION
Since the mid-1980s, it has become increasingly clear that physical inactivity has a causative role in disorders of the cardiovascular system (Arroll and Swinburn, 1994). Physical inactivity is now recognised as one of the four major risk factors for cardiovascular disease (CVD), along with cigarette smoking, elevated blood pressure and elevated blood cholesterol levels (Arroll and Swinburn, 1994). Recent Australian studies on the prevalence of inactivity among adults report similar findings to studies in New Zealand and North America, and help to identify characteristics of physically inactive people. I summarise these findings, describe outcomes of recent national campaigns and the main strategies of current Australian national policy initiatives for the promotion of physical activity. I also comment on how a stage-based approach to exercise adoption can be useful to primary-health-care practitioners, given the key role that they can play in encouraging sedentary people to be more active.

AUSTRALIAN STUDIES OF THE BEHAVIOURAL EPIDEMIOLOGY OF PHYSICAL INACTIVITY
Population prevalence data on physical inactivity are available from a number of developed countries, but until recently have tended to focus mainly on the 15–20% of the adult populations...
of the USA and Canada who are active at a level sufficient to strongly enhance cardiorespiratory fitness (Stephens, 1987; Casperson et al., 1994). However, it is more useful to focus on the physically inactive, given that the public-health challenge is to activate the sedentary, rather than encourage those who are already active to do more. A prerequisite for planning and evaluating public policies or campaigns to increase levels of participation in exercise is an understanding of the population prevalence of physical activity habits, and factors related to inactivity. Australian studies (Bauman et al., 1990) have found about one-third of adults to be sedentary in their leisure time, which is substantially similar to what has been found in North American and New Zealand surveys (Stephens, 1987; Hopkins et al., 1991a, b; Casperson et al., 1994).

Representative population data are helpful for identifying which groups should be targeted, what the content of an intervention should be, or what the characteristics are of those likely to succeed or fail in continuing to be physically active. Using pooled data from Australian population surveys, Owen and Bauman (1992) found that 30% of adults could be classified as sedentary in their leisure-time physical activity habits. The inactive were more likely to be older, less well-educated and to have lower incomes. The most commonly reported reasons for inactivity were as follows: 'no time' by 35%; 'physically unable' by 24%; 'don't want to exercise' by 13%. In multivariate analyses we found that 'no time', 'being physically unable to', and 'not wanting to exercise' were more likely to be reported by those who were older and who had lower income. Women were more likely to report being physically unable to exercise.

These Australian findings are likely to have relevance to other countries which are broadly similar in their economic and social characteristics. (Owen, 1994) For example, women, older people and the socially disadvantaged may benefit most from less-strenuous forms of physical activity (to overcome 'physically unable'). Some people perceive time pressure as a central reason for inactivity—these may include those with less discretionary time in which to exercise, such as blue-collar workers or adult members of families with several children. Strategies to increase the convenience of physical activity (such as worksite programs, or community facilities providing child care), may help such people to integrate physical activity more readily into the demands of their everyday lives. Low-cost activities, such as walking, may be more easily accessible to, and may have a greater chance of being taken up by, those who are physically inactive (Morris, 1990).

INTEGRATING PHYSICAL ACTIVITY INTO HEALTH-IMPROVEMENT STRATEGIES: AUSTRALIA'S NEW NATIONAL HEALTH GOALS AND TARGETS

National Health Goals and Targets are now part of the Medicare Agreement between the Australian Commonwealth and the States. As such, they are integral to major changes which are taking place in health-service funding and in the delivery of health care. The Goals and Targets are embedded within a framework designed to reorient the Australian health system to a focus on health outcomes, as opposed to being driven by health-service inputs and throughputs. It is intended that prevention be integral to all aspects of the operation of the health system. The Australian National Health Goals and Targets for Cardiovascular Disease (Commonwealth Department of Health and Community Services, 1994; Owen and Lowe, 1994) place a strong emphasis on the promotion of physical activity. The national target is a reduction in the proportion of adult Australians who are very inactive in their leisure time from 36% (at the time of the 1989 National Health Survey) to 25% by the year 2000.

The Australian Goals and Targets identify nine main strategies for reducing the proportion of the Australian population who are sedentary in their leisure time, as follows.

- Governments should develop strategies to encourage employers to offer their staff physical activity and fitness programs or incentives to participate in outside programs.
- States and Territories should work with the Australian Council for Health, Physical Exercise and Recreation (ACHPER) and the National Heart Foundation (NHF) to ensure that school curricula involve the regular participation of all children and adolescents in primary and high school in physical education programs several times a week.
- States and Territories should work with the ACHPER and the NHF to ensure that school physical education programs consist of physi-
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...physical activities which may be continued and maintained through later life.

- Tertiary education facilities should be encouraged to develop programs which increase the proportion of students who participate in sport or active recreation.

- Governments and non-government organisations such as the NHF should develop programs to further reinforce the convenience of regular, moderate physical activity for the maintenance of cardiovascular health.

- States and local governments should be encouraged to include walking and cycle paths and low-traffic areas as part of community recreation and transport planning activities. The NHF should continue to work with local governments to increase community exercise facilities and programs.

- States and local governments should investigate structural changes which will encourage people to walk or cycle instead of using motor transport wherever possible. Possibilities are car-free areas in cities (except for the disabled or elderly), and strategies to encourage cycling instead of driving.

- There should be a coordinated national system for the reliable and valid assessment of prevalence and trends in physical activity participation.

- The Commonwealth should fund research into effective means of promoting more widespread participation in exercise.

One element which is not identified explicitly in these strategies (although it is strongly emphasised in the overall Australian Goals and Targets document in relation to all CVD risk behaviours), is the key role which primary-care physicians and other health practitioners have in motivating and assisting sedentary people to become more active. I address this issue in the final section of this paper. The above strategies provide specific guidelines for initiatives in areas identified as a high priority. Research and demonstration projects in these areas were initiated at the start of 1995.

Factors which can influence the success of these initiatives may be able to be identified through examining some of the lessons learned from some 20 years of population studies and interventions in tobacco control, and from evaluations of recent Australian initiatives to promote physical activity.

INITIATIVES TO PROMOTE PHYSICAL ACTIVITY PARTICIPATION

The use of systematic approaches to understanding and influencing physical inactivity as a pattern of behaviour in whole populations is a relatively new scientific endeavour. Systematic studies of smoking behaviour in populations and concerted efforts to reduce smoking prevalence have been carried out for at least two decades in many developed countries. While tobacco control deals with an addictive drug, it also deals with a pattern of behaviour in a social context, which is significantly shaped by environmental and economic influences. Exercising involves a diverse set of behaviours, whereas tobacco smoking is a more-particular behaviour pattern with a less-varied topography.

There are potential implications for physical activity promotion in the following four generalisations about health behaviour change which may be abstracted from the findings of some 20 years of behavioural epidemiology studies on tobacco control (Pierce et al., 1990; Borland et al., 1994). Firstly, even with policies, programs and systematic strategies in place, changes in the overall population prevalence of health-related behaviours can be slow; we have seen a fairly steady 0.8% per annum decrease in smoking prevalence in Australia over the past 10 years. This might indicate the rate of population-wide increases in physical activity participation which realistically might be expected to take place in Australia and other countries if adequately resourced and systematic strategies like those described in the preceding section are in place over the next few years. Secondly, regulatory, educational and environmental-change initiatives can make a difference in the longer term to health-related behaviours (workplace smoking-ban studies provide some evidence on this; Borland et al., 1994). It may be possible to reach similar conclusions about physical activity in a few years time. Thirdly, as public awareness and social norms around health-related behaviours change, such changes can influence individuals' personal decision-making, choices and behavioural persistence. People start to think and do things differently as they come to believe that other people are thinking and doing things differently. Finally, changes in public awareness and social norms can influence the knowledge, attitudes, beliefs and behaviours of those political and administrative decision-makers who can...
determine public policy and funding priorities. This should make it more likely that there will be environmental and social innovations which can create settings and opportunities for physical activity, and support for properly-resourced initiatives by primary-care practitioners.

Nationwide physical activity campaigns were conducted by the NHF in 1990 ('Exercise: make it part of your day'; Booth et al., 1992) and 1991 ('Exercise: take another step'; Owen et al., 1995). The campaigns were informed by social-learning and social-marketing models, each emphasised walking as the main activity, and also focused on the precursors and early stages of physical activity adoption, drawing on the transtheoretical model's stages of behavioural change (Prochaska et al., 1992; Booth et al., 1993). The second campaign built on the message of the first campaign and emphasised the maintenance of appropriate moderate-intensity physical activities ('Exercise: take another step'). The two campaigns were promoted through paid television advertisements, pre-recorded public service announcements for radio, the distribution of a professional paper, posters, leaflets and stickers, T-shirts, sweat shirts, publicity tours by two heart-health experts, a variety of magazine articles and the scripting of one episode of each of two nationally broadcast television drama series. There was also opportunistic promotion through electronic and print media news coverage, editorials and feature articles. In addition to national media-based strategies, local initiatives were pursued at the NHF State Division level. These more community-based promotional activities emphasised special activity days and competitions.

These Australian campaigns provided an opportunity to examine systematically the influence of serial national mass-media campaigns directed at increasing levels of participation in physical activity. Face-to-face, home-based interviews with a representative national sample were carried out 2 weeks prior to and 3–4 weeks following each campaign. The evaluation of the 1990 campaign (Booth et al., 1992) found increases in the prevalence of reports of walking following the campaign. Changes were most marked in older people, and occurred across most socio-economic groups. Awareness of the campaign message increased significantly from before the first campaign to after that campaign (46% to 71%). The level of physical-activity-message awareness was still quite high prior to the 1991 campaign (63%), with post-campaign awareness increasing to 74%. Changes in reported walking for exercise and in readiness to exercise found in 1990 were not found in 1991. (Owen et al., 1995). In 1990, the prevalence of reporting no intention to do more exercise showed the greatest pre- to post-campaign decreases, suggesting that the campaign may have been most effective in reaching those who were the least active and most resistant to change. The 1991 campaign message may have reinforced those who had previously adopted activity but failed to motivate change in others; or, most of those who were able to, or who intended to, change had already done so in response to the 1990 campaign. Limits of mass media in changing health-related behaviours have been discussed elsewhere. (Flora et al., 1989; Redman et al., 1990).

King's (1991) review found few reports of large-scale campaigns with which to compare the Australian findings and where they did exist, direct comparisons were not possible. For example, King discusses findings from a Minnesota Heart Health Program initiative of increased energy expenditure estimates for their intervention group, but only over 1 year. A Canadian ParticipACTION evaluation showed that awareness of their campaign was high, but there were no data to examine awareness in the context of physical activity changes (King, 1991).

THE ROLE OF PRIMARY HEALTH CARE PRACTITIONERS

Primary-health-care practitioners are in an ideal position to encourage the adoption of physical activity in a large proportion of the community. Research with medical practitioners can inform us of the prospects and problems faced by all primary-care practitioners. For example, we know that in Australia, over 70% of people visit a medical practitioner once a year (Better Health Commission, 1986) and research has shown that the primary health care setting is an important source of advice about lifestyle change (Cockburn et al., 1987). In Australia, most medical practitioners state that they view health promotion and disease prevention as an integral part of their role, and many patients would like their physicians to advise them on lifestyle change (Dickinson et al., 1989). Research also suggests that as physicians do not, for example, screen routinely for cardiovascular risk factors, other
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than high blood pressure. Lifestyle factors are more likely to be detected, examined and acted on in patients who have already developed chronic disease (Dickinson et al., 1989). Reasons for them not routinely engaging in preventive activities include: lack of time; poor reimbursement for preventive activities; beliefs about patients’ unwillingness to change; perceived lack of efficacy of interventions; and lack of confidence in ability to help. Many of these barriers are likely to be experienced by other primary-health-care practitioners. However, there is evidence that physicians can effect changes in their patients’ cardiovascular risk factors by promoting lifestyle change (Hypertension Detection and Follow-up Programme Co-operative Group, 1979). Physical activity promotion by medical practitioners is a relatively recent endeavour, but promising strategies are being developed using stage-of-change concepts and brief counselling protocols in the Physician-based Assessment and Counselling on Exercise (PACE) project in the USA (Patrick et al., 1994).

Stage-based approaches to exercise promotion

Five key stages (Prochaska et al., 1992; Owen et al., 1992) in changing behaviours related to health risk have been identified: in the Precontemplation stage the patient is not considering change; for example, they do not wish to begin exercising. In the Contemplation stage she or he is evaluating the benefits of lifestyle change and perhaps intends to change, but has not acted on this intention; for example, a patient has decided to lose weight by being more active but has not begun to do so. Population studies have found that about half of sedentary Australian adults do have being more active on their agenda (Booth et al., 1992, 1993). In the Preparation stage he or she is taking concrete steps to become more active; for example, by joining a community activity centre, buying clothing and equipment or making commitments to be involved in active leisure pursuits with friends. In the Action stage the individual has initiated changes and is consolidating those changes and integrating them into her or his lifestyle. In the Maintenance stage the changes are consolidated and the patient is persisting with a relatively stable new pattern of regular exercise. In the Relapse stage the person may lose resolve and abandon the new behaviour pattern, feel guilty, lose confidence and revert to their previous habits. This terminates the Action or Maintenance stages, often prompting recycling through the earlier stages of Precontemplation or Contemplation.

Such a systematic approach to advice on physical activity and exercise counselling in primary-health-care settings will be a key element of overall strategies to promote higher levels of participation in the whole population. A particular challenge is to find better ways to provide information and skills effectively to involve practitioners in advising patients to be more physically active. New opportunities should begin to open up for specialist exercise and sports-science graduates in primary health care, and a range of other practitioner groups can potentially make significant contributions.

CONCLUSIONS

Population studies of physical activity and inactivity in Australia provide a basis for setting goals and targets, and for focused initiatives and public-health policy changes (Bauman et al., 1990; Owen and Bauman, 1992; Owen and Lowe, 1994). An integrated and balanced approach to the promotion of physical activity must focus not only on mass-media awareness campaigns, but also on the provision of appropriate settings (Brownell et al., 1980), facilities and resources which provide real opportunities for people to be more physically active (Donovan and Owen, 1994). What must be emphasised is that substantial and permanent opportunities to be more active in local communities need to be developed (King, 1991), with appropriate changes in public-health policy to support such initiatives (Commonwealth Department of Health and Community Services, 1994; Owen and Lowe, 1994). Physicians and other health practitioners (particularly those who are educated in the exercise and sports sciences) in primary health-care settings have a key role to play in advising and encouraging sedentary people to be more active, and also in being advocates for public policy changes which will make easier the choice to be more physically active.

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Address for correspondence:
Professor Neville Owen
School of Human Movement
Deakin University
221 Burwood Highway
Burwood
Victoria
Australia 3125

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