ORGANISATIONAL AND METHODOLOGICAL ASPECTS OF HEALTH - RELATED PHYSICAL ACTIVITY

Jan Borms

Vrije Universiteit Brussel, Faculty LK
Human Biometry and Health Promotion

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Introduction

Epidemiological studies over the past four decades have convincingly shown that physical inactivity and low physical fitness contribute substantially to the major chronic diseases prevalent in industrialised societies. Many scientific, medical and health organisations around the world have recognised formally the importance of regular physical activity (PA) as a means to promote and maintain health. Numerous statements on PA, based on solid scientific data, have been produced and made available. A summary of these can be found in Blair et al (1996).

If exercise is so good for physical and mental health, as the evidence suggests, why aren't more people doing it and why are not all interventions, to reverse the trend of increasing sedentariness, successful? Low activity habits indeed are highly prevalent in most industrialised countries and monitoring PA patterns in a given population has now become a standard procedure in most national fitness projects.

The evidence on health benefits of PA and the risks of inactivity will be dealt with in another paper. The focus of this article will be on the "how", the interventional aspects of health related physical activity (HRPA).

Interventions by means of exercise prescription

Traditionally, it was believed that it was sufficient for people to change their behaviour if they were told that their health behaviour could lead to a health problem. It was assumed that this would lead to an intention to adapt their behaviour to this new insight and that, as a consequence, the behaviour would modify as well. Obviously, what people do correlates partially with their ideas about the consequences of their behaviour. A higher level of PA is observed in people, who believe that it is important for their health to be physically active (Steptoe & Wardle, 1996). Often it is difficult to know what is cause or consequence. Furthermore, it should be acknowledged that many variables have a strong influence on behaviour. It cannot be expected e.g. that people will be more physically active if facilities are insufficient (in terms of space, time and equipment) or if they do not perceive that it is normal for them to be physically active. One cannot expect a long-term change of behaviour if this change implies more effort than that it gives fun.

Exercise prescription has been used for years as the first step in developing an individual's exercise program. The typical prescription contains elements of frequency, intensity, time and type of exercise (the so-called FITT-rules) and is based on one of the above mentioned position papers. Although supported by solid scientific evidence, the exercise prescription guidelines are not very effective in facilitating behaviour change, although there will always be people who like to be and who need to be "monitored". Furthermore, the guidelines are always better than "trial and error".

Just as people do not always respond to the health risk/benefits approach to adopt physically active lives, they are not necessarily motivated by exercise prescriptions. Perhaps this is partially due to the fact that the earlier recommendations were focussing too much on high intensity levels and were too challenging for most people, especially beginners. The evidence now exists that the majority of health benefits can be gained by performing moderate-intensity physical activities outside of formal exercise programs.

The new recommendation extends the

"fitness" model to a much broader PA-health paradigm (Pate et al, 1995). Until the mid-nineties, interventions for the promotion of PA, were aimed towards participation in sports and structured programs and performing high intensity FA. Today, a majority of the people, still believe that it is necessary to do sport to be physically active. There is, however, a trend from promotion of sports to promotion of daily moderate FA obvious in the US and in some European countries. This does not mean that sport as such has no significance anymore as a way of activity. The reality is that it is no longer the only means to be physically active.

Interventions at the individual and clinical level (micro level)

The individuals for whom an individual intervention is useful are those who would like to be somewhat more active, but who find it difficult to do it all by themselves, those who have been medically advised to exercise, 'new beginners' and individuals who begin exercising but relapse in sedentarism. From the few results obtained in studies, it is advised that individual interventions need to be based on techniques of behaviour modification, making use of indirect (mediated) interventions, aiming at daily participation in moderate non supervised PA that is appropriate for healthy people of all ages (Borms et al., 2000).

Interventions at the individual and clinical level are important but are unlikely to solve the problem of too many low active individuals in society.

If people are stimulated to participate 3 times/week in a real sport, this may be too much for most of them. "Lifestyle physical activity " (LSPA) may be a solution. It is especially important for the reduction of inactivity in sedentary populations. Dunn et al. (1998) defined LSPA as: "the daily accumulation of at least 30 minutes of self-selected activities, which includes all leisure, occupational, or household activities that are at least moderate to vigorous in their intensity and could be planned or unplanned activities that are part of everyday life". A critical part of this definition is that these are activities that the individual selects and which are not prescribed. Also these activities can be consciously planned by the individual or they can be unplanned by manipulation of the environment, such as signs suggesting using the stairs and not the elevator.

The relatively new norm of accumulating 30 minutes per day of moderately intense PA on most or all days of the week (Pate et al., 1995) has not yet been used in many intervention studies. It is therefore unclear at this time what the long-term effects of LSPA interventions are.

Interventions in settings (meso level)

Interpersonal contact, the face-to-face approach, is not capable of reaching a sufficiently large number of people to have a significant effect. In order to improve the health on a population scale, interventions to promote FA, must therefore be conceived for a large group.

Interventions at the meso level are those that are performed within different settings, such as schools or work sites.

Schools

Schools and communities should promote PA among children and adolescents because many young people already have risk factors for chronic diseases associated with adult morbidity and mortality.

Schools and communities have the potential to improve the health of young people by providing instruction, programs, and services that promote enjoyable, lifelong PA. Schools are an efficient vehicle for providing PA instruction and programs because they reach most children and adolescents.

Communities are essential because most PA among young people occurs outside the school setting. Schools and communities should coordinate their efforts to make the best use of their resources in promoting PA among young people.

Ideally, efforts to promote PA should be part of a comprehensive health program.

Based on published research, behavioural theories and standards of "good practices in physical education, sports science and health education", the Centers for Disease Control and Prevention (CDC) developed ten recommendations for school and community programs promoting FA among young people (CDC, 1997).

1. For the policy makers: establish policies that promote enjoyable, lifelong PA among young people.

2. Environment: provide physical and social environments that encourage and enable safe and enjoyable PA.

The physical and social environments of children and adolescents should encourage and enable their participation in safe and enjoyable physical activities. Access to safe spaces and facilities for PA in the school and the community should be provided.

School spaces and facilities should be available to young people before, during, and after the school day, on weekends, and during summer and other vacations. These spaces and facilities should also be readily available to community agencies and organisations offering PA programs.

3. For the physical education profession: implement physical education curricula and instruction that emphasise enjoyable participation in PA and that help students develop the knowledge, attitudes, motor skills, behavioural skills, and confidence needed to adopt and maintain physically active lifestyles.

Students' knowledge of and positive attitudes toward PA should be developed. Knowledge of PA is viewed as an essential component of physical education curricula. For both young people and adults, knowledge about how to be physically active may be a more important influence on PA than knowledge about why to be active.

Physical education teachers should encourage students to be active before, during, and after the school day. Physical education teachers can also refer students to community physical sports and recreation programs available in their community and promote participation in PA at home by assigning homework that students can do on their own or with family members.

4. For the health education profession: implement health education curricula and instruction that help students develop the knowledge, attitudes, behavioural skills, and confidence needed to adopt and maintain physically active lifestyles.

5. Extracurricular activities: provide extracurricular PA programs that meet the needs and interests of all students. Link students to community PA programs, and use community resources to support extracurricular PA programs. Schools should work with community organisations to enhance the appropriate use of out-of-school time among children and adolescents. Frequently schools have the facilities but lack the personnel to deliver extracurricular PA programs. Community resources can expand existing school programs by providing intramural and club activities on school grounds. For example, community agencies and organisations can use school facilities for after-school physical fitness programs for children and adolescents, weight management programs for overweight or obese young people, and sports and recreation programs for young people with disabilities or chronic health conditions.

6. Parental involvement: include parents in PA instruction and in extracurricular and community PA programs, and encourage them to support their children's participation in enjoyable physical activities.

7. Personnel training: provide training for education, coaching, recreation, health-care, and other school and community personnel that imparts the knowledge and skills needed to effectively promote enjoyable, lifelong PA among young people.

8. Health services: assess PA patterns among young people, counsel them about PA, refer them to appropriate programs, and advocate for PA instruction and programs for young people.

9. Community programs: provide a range of developmentally appropriate community sports and recreation programs that are attractive to all young people.

Most PA among children and adolescents occurs outside the school setting. Thus, community sports and recreation programs are integral to promoting PA among young people. These community programs can complement the efforts of schools by providing children and adolescents opportunities to engage in the types and levels of PA that may not be offered in school. Community sports and recreation programs also provide an avenue for reaching out-of-school young people.

Provide a diversity of developmentally appropriate community sports and recreation programs for all young people.

Young people become involved in structured PA programs for various reasons: to develop competence, to build social relationships, to enhance fitness, and to have fun. However, adolescents' participation in community sports and recreation programs declines with age. Many young people drop out of these programs because the activities are not fun, are too competitive, or demand too much time. Because definitions of fun and success vary with each person's age, sex, and skill level, community sports and recreation programs should assess and try to meet the needs and interests of all young people. These programs should also try to match the skill level of the participants with challenges that encourage skill development and fun and to develop programs that are not based exclusively on winning.

Provide access to community sports and recreation programs for young people.

In most communities, PA programs for young people exist, but these opportunities often require transportation, fees, or special equipment. These limitations often discourage children and adolescents from low-income families from participating. Communities should ensure that all young people, irrespective of their family's income, have access to these programs. For example, community sports and recreation programs can collaborate with schools and other community organisations to provide transportation to these programs. Communities can also ask businesses to sponsor youth PA programs and to provide children and adolescents from low-income families appropriate equipment, clothing, and footwear for participation in PA.

10. Evaluation: regularly evaluate school and community PA instruction, programs, and facilities.

Work site

A reasonable number of publications on PA in the work site exists, but there is no consensus about the effectivity of this kind of health promotion. Due to the different culture and the rather weak effects found in the US, the American programs cannot be just copied in Europe. It is advised that effective work site interventions need to be based on techniques of behaviour modification, making use of indirect (mediated) interventions, aiming at daily participation in moderate non supervised PA (Dishman & Buckworth 1996).

Interventions at the macro level

Effects of mass media campaigns

Over the last years, a number of mass media messages have been launched in a great number of countries. Before 1996, most of the media messages were aimed at promoting sport and not daily moderate PA. The effectivity of these messages has been seldom studied. The findings show that it is possible for well designed and well prepared mass media campaigns to effect people's intention to become physically active. They can particularly stimulate participation in walking. These campaigns can only be effective, however, if they do not occur in isolation, but if they are supported by actions at the meso level, or by interventions to change the environment. Media campaigns are not only capable of spreading the message to a large public, but they can also have an impact on politicians to be supportive for actions to promote PA and to adapt legislation accordingly.

Changing the environment

According to many experts, environmental interventions will have a greater impact on PA and public health, will have more long term effects and will be, perhaps, less expensive than educational programs.

The public health community will need to strengthen its leadership role, but interesting partnerships must be established with state and local authorities, departments of public transportation and planning, parks and recreation associations, state and local administration for sport and open air activities and the sports and recreation industry.

As for other health behaviours, more general policy initiatives must be considered. The examples of such initiatives are numerous: e.g. smoking control, healthy diets... It is therefore recommended that broadly based efforts be implemented to address the problem of sedentary habits, even though strong evidence that such policies are effective in increasing FA is not currently available. Specific policies will vary widely between countries due to the differences in governments and societies

Legislation

Legislative options to encourage human energy expenditure and make it less convenient to be sedentary should be considered. Legislation to alter the physical environment to encourage activity, is but one good example (see also Sallis et al., 1998 who suggested a number of policy and environmental interventions to promote FA). Legislation could require project developers and planners to provide more widely distributed parks and exercise facilities, so that it is convenient for all to have access to such facilities. Providing attractive footpaths and cycling trails could increase FA by encouraging commuting and the use of human power.

Tax policies

Some of the objectives could be attained by appropriate tax legislation. Exercise tests and fitness club memberships e.g. could become tax-deductible items.

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Correspondence to:
Prof. Jan Borms, Ph.D.
Vrije Universiteit Brussel
Faculty of Phys. Ed. & Phys Ther. (LK)
Human Biometry - Health Promotion (Head vakgroep Biom)
Pleinlaan 2
B-1050 Brussels, Belgium
Phone: +32 2 629 27 34
Fax: +32 2 629 2736
http://www.vub.ac.be