

Policy Brief on Promoting Physical Activity among Adolescents

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ABSTRACT

Regular physical activity (PA) is an underlying factor since childhood and adolescence for having a healthy and active future for life. The aim of this study was to review the evidence on increasing the youth PA to develop the national program at country level. At first, the databases were searched using the sensitive keywords, and systematic reviews of the relevant databases were extracted. The studies were evaluated in terms of relevance and methodological quality for effective interventions that were detected. These cases were also identified in the effective interventions: disadvantages, benefits, costs, methods, and limitations of early studies, which were based on systematic review of the studies. Three interventions were identified as physical education curriculum reform, the creation of extra-curricular activities, as well as approaches to environmental and social support. Evidences showed that the relative impact of these interventions were not high. Thus, a combination of all three options of integrated approach is recommended for reducing the sedentary lifestyle of youths.

Key words: Behavioral change, evidence informed, life style, policy

INTRODUCTION

In spite of the public awareness about the health benefits of physical activity (PA) for youths, still there are barriers for an active lifestyle in many communities. The purpose of this study was to develop a national program to increase the PA in adolescents. Indeed, the obtained data from National School-Based Surveillance of Students' High Risk Behaviors indicated the decrease in PA is a serious problem and an action must be done.^[1] As a result, some interventions should be chosen for implementation. Those interventions should be approved by using the best available evidences and they should also be practical. Due to the nature of the PA, it is necessary to consider the beneficiary of various interventions to make the final choice. In the literature of evidence informed policy making, for these cases, the recommendation of formulated policy brief (PB) have been suggested. PB is a new approach in producing and presenting the evidences for decision makers and policymakers and is consisted of a compilation of systematic reviews and local

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pediatric * OR student) AND (school) AND (physical activity OR exercise OR sport OR cycling OR walk * OR physical education OR television viewing OR TV viewing OR sedentary) AND (intervention OR effectiveness OR promotion OR initiative * OR behavior change OR policy OR strategies OR health education)

The study inclusion criteria were included: (1) Children, adolescents (up to 19 years), (2) One or more subsequent interventions used to improve physical activity with or without considering the health consequences, (3) The main focus of interventions was on school (school based), respectively. However, the intervention also could be combined with multi-level actions, including family or community support. Those interventions were not considered, which were based solely on family, community or clinical settings, and (4) The main purpose of the intervention was not to change in specific diseases or health problems (such as obesity, skeletal problems, or...).

The results of this searching were included 640 systematic reviews. Titles and abstracts were reviewed independently by two browsers. Thirty articles met the inclusion criteria, which the full text of all of the articles were studied by three browsers. After the assessment with the 'Critical Appraisal Skills Programme' (CASP) critical appraisal tool, 17 articles were remained which had the minimum quality required for their inclusion. Finally, all the interventions used for the improvement of the physical activity were identified by three researchers independently after careful and complete study of the text articles. Then, by holding a meeting and exchanging the ideas between the research team members, the general classification of the existing interventions were performed with consensus.

Policy options

The first policy option (PA curriculum reforms) is the curriculum change in PA strategy with increasing the duration and intensity of physical activity to improve the quantity and quality of education and physical activities,^[27] which has been considered in the secondary and high schools of the country. Educational provision of these classes can be a combination of the followings: physical activity programs, programs to reduce the time spent for watching television and sedentary activities along with teaching healthy eating and

non-tobacco use.^[28] New educational approaches based on behavioral theories are well known (such as health promotion model (HPM) and social cognitive theory).^[29] Training aids can be used in most types of traditional methods (education using leaflets and brochures) and modern methods (CD or instructional video and internet applications).^[19,30] The second policy option (creation of extracurricular activities) includes the followings: entertainment programs (in the form of games and enjoyment), holding regular competitions and summer camps (such as hiking, biking, etc). Strategies employing short physical breaks (on average 10 minutes) have been fixed as a part of this program in addition to the existing curriculum.^[31,32] The final policy option (environmental approaches and social support) is included a range of strategies for capacity building, providing sports facilities and other cooperation from the community and families.^[33,34] Considering the available resources, it will be possible to exploit one or more interventions. Policy options for promoting physical activity and the implementing strategies of three alternative policy options are shown in Tables 1, 2.

DISCUSSION

This PB was developed with three policy options based on the evidences collected by searching in existing reviews. The global evidences showed that altogether, implementing of interventions and school-based multilevel can promote physical activity including training programs, physical activity (with the family and community support) and also may be effective to some extent in improving the adolescent health and fitness indicators.^[5,18,29,43-45] However, it should be noted that reviews of the initial studies due to the heterogeneity, i.e., different types and quality of studies and implementing a variety of interventions, did not have a quantitative assessment (meta-analysis) of the used interventions. Their conclusion was based on the aggregate findings of the studies. These findings also showed that there are still shortcomings and gap, such as lack of the interventions effectiveness on different social – economic groups, ethnicities and separate programs for boys and girls. However, it was emphasized that the national associations and research organizations have the priority in promoting the PA. They should identify the financial resources and existing

Table 1: Policy options for promoting physical activity, their description, and attributes

	Policy options		
	Physical activity (PA) curriculum reforms	Creation of extracurricular activities (competitive and recreational)	Environmental approaches and social support
The intervention description	<ul style="list-style-type: none"> - Physical activity programs in schools, including at least 30 minutes daily of moderate to vigorous activity^[31,35] - This program is conducted with the following modes: <ol style="list-style-type: none"> 1 - Adding new training classes 2 - Increasing the time of available classes 3 - To increase the physical activities from moderate to severe during the classes^[33] 	<ul style="list-style-type: none"> - In addition to PA curricula, in order to activate the students in their leisure time, PA routinely is performed in recreational or competitive programs (with competitions), in or outside the school environment. Such as sports clubs and other places^[31,32] 	<ul style="list-style-type: none"> - This policy option depending on the available circumstances could be a combination of the followings: <ol style="list-style-type: none"> 1 - The provision of sports facilities^[33] 2 - Health Screening 3 - Distribution of healthy food 4 - Using of pedometer^[36] 5 - Gaining support from the other beneficiary organizations^[37] (such as the Ministry of Education - Ministry of Health - Ministry of Youth and Sports) 6 - Involving the parents in PA training programs^[18]
Benefits	<ul style="list-style-type: none"> - Effectiveness of PA training classes^[27] - Increasing the quality of training programs through: <ol style="list-style-type: none"> 1 - Increasing the duration of PA^[18] 2 - Using modern methods of learning (such as behavioral theories – computer programs)^[19,29] 	<ul style="list-style-type: none"> - Leisure aspects and non-compulsory activities - The opportunity to perform desired activities^[38] - Expanding group of friends and strengthen social relationships^[38] 	<ul style="list-style-type: none"> - Participation of the families^[18,39] - Attracting the participation of concerned groups in society^[37] - Sporting activities in sport halls - The use of pedometer as an incentive to increase the physical activity for students with high interest^[36]
Disadvantages	<ul style="list-style-type: none"> - Time consuming coordination and compliance with new programs - The need for human resources - The need for financial resources 	<ul style="list-style-type: none"> - Restrictions to allocate specific time to exercise out of the curriculum, especially in high school level - The need for financial resources 	<ul style="list-style-type: none"> - Poor coordination between the sectors - The need for financial resources - Increase in sports facilities in schools. Most likely, the issue of sports injuries will have its own importance^[40]
Costs**	*	*	*
Acceptability	*	*	*
Equality considerations	<p>Altogether, the evidence found on implementing effective interventions in physical activity in European adolescents (performing the secondary analyses) did not show any significant difference in the inequality of economic - social programs in heterogeneous classes (SES). It was suggested to perform separate studies to identify the potential disparities in the upper classes and lower SES.^[41] National evidence was not found in this context.</p>		

*There is a lack of evidence on the costs of these strategies.

Based on systematic reviews in America, the **cost of school-based interventions was 48.86 (cost/person (\$)).^[25]

facilities for a long term monitoring program implementation.^[5,18,46] In searching local evidences, single studies showed the positive effects of multi-level interventions the same as the global evidences,

but in neither of them there were comprehensive documentation for providing scientific evidences.^[13,47-50] There were numerous challenges in the field of financial resources, human resources and

Table 2: Implementation characteristics of policy options for improving physical activity

	Policy options		
	Physical activity (PA) curriculum reforms	Creation of extracurricular activities (competitive and recreational)	Environmental approaches and social support
Barriers to implementation	<ul style="list-style-type: none"> - Personal negative experiences^[38] - Health problems and disabilities - Low educational attraction due to the mandatory case^[38] - Applying pressure from school officials to reduce the PA programs due to financial problems or the time limit (such as preparing students for university entry)^[35] - Lack of trained manpower - Inequality of educational potential in different areas^[42] 	<ul style="list-style-type: none"> - Fear of competition^[38] - Inequality of educational potential in different areas^[42] - Lack of coordination with agencies outside the school (including municipalities) - Time limit 	<ul style="list-style-type: none"> - Lack of suitable place for the activities - The most important problem in the implementation of this strategy is the high cost - Cost of repair and maintenance of sports facilities - Lack of adequate cooperation of families - The difficulty of coordinating the activities of different departments, institutions and ministries^[38]
Implementation strategies	<ul style="list-style-type: none"> - Increasing the participation of students in PA classroom programs considering: <ol style="list-style-type: none"> 1 - Specific legislation to exempt students from exercising^[35] 2 - Considering the equivalent activities for the students with respect to specific diseases (such as obesity - asthma) 3 - Increasing physical activity during the PA class time^[33] 4 - Creation of athletic specific skills with new classes 5 - Implementation of trained teachers to perform programs 6 - Encouraging school teachers to act as a model for the students^[18] 7 - Application of known theories of behavior 	<ul style="list-style-type: none"> - Creation of lively atmosphere and fun during the program - Taking regular short break times throughout the week at school^[32,35] - Recreational programs outside of school - Organizing a student committees on school health 	<ul style="list-style-type: none"> - Effective participation of families in programs^[18] - Application of appropriate, user friendly and safe equipment^[38] - Encouraging and awards^[38] - Enhancing the capacity and quality of sport halls - Coordination and cooperation of concerned organizations^[37]
Evidences	<p>Numerous evidences obtained from systematic reviews show multilevel school-based interventions and sometimes with families and community participation can be effective to increase the duration of physical activity, fitness and improving some health indicators (such as cholesterol reduction and increasing the lung capacity).^[5,18,29,43,44] However, the impact of these programs in the long run is not clear. Anyhow, if they are not profitable, loss is not expected for them.^[18]</p> <p>Note: It is necessary to be considered that none of the policy options was considered alone. It is expected that the application of options are more effective together.</p>		
	<ul style="list-style-type: none"> - Strong evidences suggest that physical training in the following ways will increase the levels of PA. They are effective and improve the fitness: <ol style="list-style-type: none"> 1 - Adding new training classes 2 - Increasing the hours of existing classes 3 - Increasing the moderate to severe physical activities during the classes^[33] 	<ul style="list-style-type: none"> - Having a short break time to increase the health indicators and can be effective in increasing the PA levels^[31,32] - Application of recreational programs for children and adolescents is effective to increase the physical activity^[39] 	<ul style="list-style-type: none"> - Creation of capacities or access to sports facilities at the community level along with extensive information of activities is effective to increase the levels of PA and the percentage of people who carry out these activities^[33]

equipments. Severe weaknesses in inter-sectoral cooperation give rise to these problems. Finally, by considering the existing documents and aggregating the results of the interventions with appropriate quality and effectiveness, three available policy options were prepared. It seems that implementing the combination of policy options can be more effective.

However, it should be noted that implementing the proposed interventions have their own specific circumstances. The results can be effective only by respecting the limitations, resources and facilities. Therefore, since the possibilities and potential of different regions of the country is different, implementing a similar policy for all areas is not possible (e.g., using the pedometer, providing specific sports equipment and the usage of sports halls or equipped athletic places). This is recommended that the aspects of work to be measured by organizing a meeting with attending the planners and experts in order to prepare an equivalent program. Finally, it is expected that developing operational plans with using a combination of the three policy options will be instrumental in promoting physical activity in the secondary and high school students (ages 12 to 18 years) of the country.

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