Reinforce Health-related Education Early in School: Results of a Randomized Trial in Portugal
在學校中儘早加強與健康有關的教育: 來自葡萄牙中學的隨機調查結果

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Abstract

The purpose of this study is to investigate the health-related quality of life of school children in Portugal. We used FITNESSGRAM (health-related fitness test) and questionnaire to investigate a random sample of 193 children aged 10-16 years from one public school in Portugal. Survey showed: (1) Most students tested were unable to meet all the minimum standard of the 6 tests in FITNESSGRAM to be considered physically fit and educational benefits; (2) Nearly a quarter of the students are either overweight or at risk of becoming overweight; (3) More than 70% of them do not participate in exercise on regular basis. A quarter of the girl students don't do any exercise after physical education; (4) Most of them watching TV everyday and nearly half of them more than 2 hours per school day. These damaging behaviors among the school-aged students can increase risk for health problems both now and in the future easily. Survey showed that health education in middle school in Portugal need to be improved, also the curriculum of physical education in school in Portugal need to be emphasized more on health-related physical activity rather than on competitive sports or skill-related program. School is often considered to be an ideal place to promote health. It is desirable to reinforce health-relate education early in school, and it would yield twice the result with half the effort for shaping nation's future health and social well-being.

Key Words: School children, Health education, Physical education, Health-related physical fitness

摘 要

本文旨在調查葡萄牙中學生的與健康有關的生活質量情況，作者使用了 FITNESSGRAM 健康有關的身體素質測試專案組和問卷，隨機對 193 名年齡在 10 至 16 歲之間的葡萄牙在校中學生進行了測試和調查。結果顯示：許多學生（80% 以上）沒有能全部通過 FITNESSGRAM 中所有六項被認為是達到健康和取得教育成效所必須的最低標準；近四分之一的學生超重或有肥胖症；超過 70% 以上的學生不經常參加鍛煉，四分之一的女生在學校體育課後從不鍛煉。相反，所有學生基本上都天天看電視，一半學生每天看電視 2小時以上。我們注意到在學生身上的這些不健康習慣都會增加學生現在和今後健康問題的風險。調查顯示在葡萄牙中學的健康教育有待提高，學校體育課也更需要加強與健康有關的活動而不應該過分強調競技體育和技巧專案。學校是普遍被認為推進健康的好場所，儘早在學校裏加強與健康有關的教育，這會對國民未來的健康和社會的美好都能起到事半功倍的效果。

Introduction

Today, major health problems are caused by behaviours of lifestyle, such as lack of physical activity, nutrition, smoking, alcohol, drug use, unhealthy sexual behaviour etc. Behaviour and attitudes of health are initiated during childhood and responsible for most of the leading causes of death and illness (Blair et al., 1995). Schools are often considered to be an ideal place to promote health. In the United States, for example, an estimated 95% of all children aged 5 through 18 years

are enrolled in school (Walter et al., 1988). The quality school education is not only benefits children at school, but also their future, our society, as well. Quality health education improves children's knowledge, attitudes and behaviour about health. Quality physical education increases the physical competence, health-related fitness, self-esteem, and enjoyment of physical activity for all students so that they can be physically active for a lifetime (Seefeldt & Vogel, 1986). Despite the promise of school setting to produce positive health outcomes in children, some professionals have expressed disappointment in the results of school health education (Sallis et al., 1991). In Portugal for example, students in primary school from grade 1st to grade 4th only have one teacher for each class and this teacher has to teach all subjects, including the subject of physical education. Children also do not have "enough" time in physical education classes (Sousa & Pereira, 1992). After having studied children's physical activity in leisure time for about 6,000 children aged from 10 to 19 in Portugal, Maia and Vasconcelos (2001) revealed the decline of school-based children participating in physical activity with their age, especially for girl students. Mota (1993) also suggested early that children in Portugal should participate in 20 minutes of moderate to vigorous physical activity which involved the most big muscle groups for at least 3 times per week.

The purpose of this study is to investigate the health-related quality of life of school children in Portugal. We use FITNESSGRAM, a new health-related fitness test and questionnaire to investigate a random sample of 193 children aged 10-16 years in Portugal. We also inquired the curriculum of physical education and health education in school in Portugal.

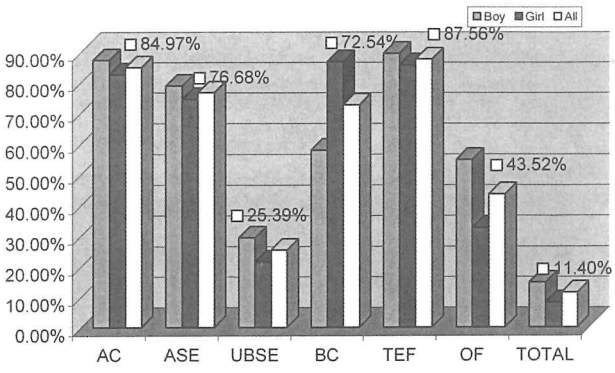
Methods

In this study we selected a random sample of 193 middle school children (95 boys vs. 98 girls), age between 10 and 15 (average 12.5), from a middle school in Braga, in north part of Portugal. All participates took part in the health-related fitness tests FITNESSGRAM and questionnaire. The questionnaire includes of a group of questions about social background, diet, and physical activity in leisure time. FITNESSGRAM is a health-related fitness tests, which was developed by the Cooper Institute of Aerobics Research. It includes 6 areas (Figure 1): aerobic capacity, abdominal strength & endurance, upper body strength & endurance, body composition, trunk extensor & flexibility, and overall flexibility. We also inquired about health education in the school.

Results & Discussions

According to the results of health-related physical fitness test-FITNESSGRAM (see Figure 1), only 11.40% of the students met all six fitness standard of FITNESSGRAM that can be considered healthy according to its standard for different age and gender. Most students could not achieve that goal.

Figure 1. Result of Fitness Gram.

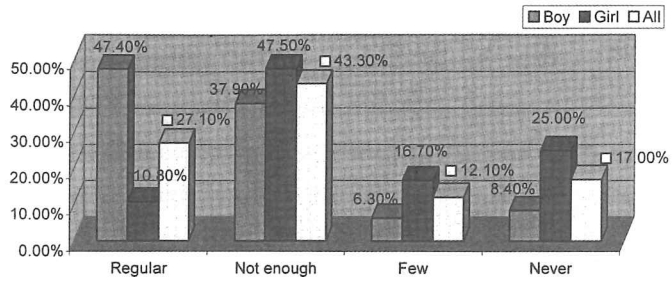


AC=Aerobic Capacity, ASE=Abdominal Strength & Endurance, UBSE=Upper Body Strength & Endurance, BC=Body Composition,
TEF=Trunk Extensor & Flexibility, OF=Overall Flexibility.
TOTAL= All 6 items in healthy zone of FITNESSGRAM

A further breakdown of the results showed that about 15% of the students did not meet the minimum fitness standard for trunk extensor & flexibility and aerobic capacity respectively. About 25 % did not meet the standards for abdominal strength & endurance and body composition. We found the imbalance of their results in FITNESSGRAM, for example, many students cannot do even one correct push up. Their weakest area was upper body strength & endurance, where about 75 % of the students did not meet the standard. The second weakest area was overall flexibility, where more than half of the students did not meet the standard.

Regular physical activity is associated with enhanced health and reduced risk for all-cause mortality. According to our investigation (see Figure 2), only about 30% of them participate in moderate-to-vigorous physical activity on a regular basis. Between the different gender, 47.4% of boy students and 10. 7% of girl students are engaged in regular basis of moderate to vigorous physical activity, 25.0 % of the girl students and 8.4 % of the boy students don't do any exercise after physical education classes. The girl students are less like to engage in physical activity than the boy students. This result is similar to that of Maia and Vasconcelos (2001).

Figure 2. Physical Activity in Leisure Time.



"Regular" means at least 3 times per week 30 minutes of moderate to vigorous physical activity

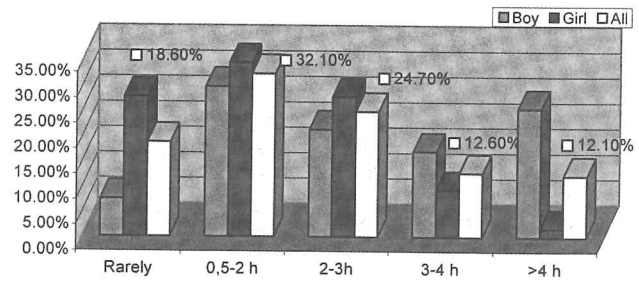
"Not enough" means 1-2 times per week 20-30 minutes of any kind of physical activity

"Few" means 1-2 times per month 30 minutes of any kinds of physical activity

"Never" means participate in any kinds of physical activity.

Our research results showed that most of the students don't like participating in physical activity. On the contrary, they spend their leisure time on passive activities such as watching TV (see Figure 3). According to the questionnaire, 81.4 % of the students watching TV every school day and half of them watching TV more than 2 hours in every school day, a quarter of them even more than 3 hours.

Figure 3. TV Viewing Time in School Day.



After knowing the results of their health-related physical fitness test and some behaviours of their lifestyle, let's have an eye on school education in Portugal. According to our investigation, from grade 1st to grade 9th, only those students from Grade 6th and grade 8th have chance to know some knowledge about food, nutrients and sex safety at school. After grade 9th, most students do not have chance to have health education according the study they select for their future. We can conclude that the time and contents of health education in school are far from enough to emphasize the health behaviours of school-based children. The damaging behaviours among the school-aged students increase the risk of health both now and in the future easily. But the school-based children are too young to realize it by their age and knowledge.

In Portugal, children from grade 1st to 12 th have physical education in school. However, the physical education always be neglected in primary school. For example, from grade 1st to grade 4th, there is only one teacher who should teach all subjects (include subject of physical education) for each class. These teachers normally are not professional enough in the area of physical education. During this period of time, physical education don't need a mark, so physical education always be affected by other "important" subjects easily, also by the playground and sports facility in school too. Children do not have sufficient time in physical education. From grade 5th to 12th, we found that the curriculum of physical education in school is more emphasized on competitive sports or skill-related programs. Survey showed that children practice more on sports (such as football) and skill-learning programs during their physical education in school. Many boys even would like to have football class in all physical education classes. Though many girls like to have aerobic dance and swimming classes, which are shown to be optimal for the body's well being by research, but most schools do not open these kinds of health-related courses because of guideline of curriculum and condition of schools.

Conclusions

Schools are often considered to be an ideal place to promote health. School health education could be one of the most effective means to provide students with knowledge and skills to prevent and reduce health-impairing behaviour. Reinforce health education early in school would yield twice the result with half the effort for shaping nation's future health and social well-being. Government, school counsellors, health educators and physical education teachers can play an active role in development of lifelong fitness for students by supporting, encouraging and implementing systemic health education in school.

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