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Education and health of children and adolescents: an interdisciplinary vision on the fight against childhood obesity

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Introduction

Increasing attention has been paid to the study of health habits and behaviour risk in children and adolescents as the scientific community has acknowledged that these behaviours are learned in the early stages of their life. Researchers also observed that these behaviours are associated with increased morbidity and mortality in children and adolescents, a phenomenon which was designated as "risk behaviour epidemic".[1] These data have led to the development and implementation of school-based prevention programs aimed at promoting positive health practices.

Over the past few years a broad range of expertise has been obtained on the promotion of health, particularly in the United States[1] and in some European countries[2]. Nonetheless, the implementation of these programs has to be supported by current epidemiological data sensitive not only to variations in health practices throughout the life cycle, but also to regional, socioeconomic and cultural factors.[3] Therefore, the establishment of a more global health policy at European level and of concerted effort to promote health, research of health (and risk) behaviours in less economically and educationally developed is, in our view, essential. On the other hand, although monitoring the health status of children and youth, as well as interventions to promote school-based health, following defined technical guidelines, has improved in the last few years, it is still far from achieving the goals proposed by international bodies. This is the background on which the objective of our article rests, an article which was the topic of one of the satellite conferences of the Second World Congress on Child and Adolescent Education and Health. Drawing attention to the importance and topicality of focusing on an interdisciplinary vision in terms of school-centred education for child and adolescent health.

Education for health, under an interdisciplinary approach, must envision improvement of the living conditions of the population and acknowledgment of the right to citizenship, based on a holistic approach to health, equity, multi-sector collaboration, social participation and sustainability.[4] It is a strategy for the production of health, which must stimulate the interrelationship between thinking-acting and policies and technologies, involving economic, social and even religious aspects.

Education for health must be understood as a cross-cutting, multi- and interdisciplinary strategy, not limited to issues related to disease prevention, treatment and cure. It must allow the individual to make decisions autonomously, be determined to fight for his/her rights and fulfil his/her duties responsibly, following the logic of giving power to the person, which underlies the empowerment theory. Within this framework, School and Health Care Services must be aware of this aspiration. Therefore, promoting health encompasses much more than just disease absence, as this action must be grounded in the improvement of the living conditions of the population, guiding the individual, family or community toward decision making, changing behaviours and promoting global health and well-being.[5] Based on this principle, we support the importance of paying special attention to the promotion of health at school given that it is paramount that this action is felt by students, mainly for the following reasons: firstly, because all children from a country go through the educational system;[6] secondly, because the outcomes from several researches clearly show

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that our behaviour in terms of health (and in other domains) is rooted in childhood and adolescence,[3,7] and thirdly, because the implementation of Education for Health at School affects individuals in the stage of civic, mental and social education.[8]

Creating schools which promote health in the fight against childhood obesity

It has been shown that several health problems which lead to death and morbidity are related to lifestyle, which includes health behaviour. As mentioned above, one of the ways to encourage behaviour adoption/change is Education for Health, which can be regarded as *"… a deliberate process of communication and education-learning oriented towards the acquisition and strengthening of healthy behaviour and lifestyles, strengthening of positive choices in terms of health and promotion of changes in unhealthy or risk attitudes and lifestyles"*.[9] Hence it is a process which informs, encourages and helps population to adopt and maintain healthy practices and lifestyles.

Among the variety of health issues that are a reason for concern to world health care institutions, Obesity has been one of the issues that has drawn more attention. Two billion people in the world suffer from Overweight and Obesity, a fact which shows that obesity is a true epidemic, particularly alarming among young groups.[10] Childhood obesity is even one of the most serious and dangerous public health problems, both in European countries and other parts of the world, which leads to the statement that childhood obesity is presently the most common paediatric disease at global level.[10-12] It is estimated that around 200 million school-age children across the world suffer from overweight, out of which approximately 45 to 50 million are obese. But the main reason for concern is that these figures are about 10 times higher than those recorded in 1970.[13]

According to the European Commission, Portugal is among the European countries with the highest number of overweight children, which demands an urgent intervention in terms of prevention.[14,15] Portugal is even one of the countries located in the Mediterranean Basin - besides Greece, Italy and Spain - with higher prevalence of childhood obesity.[16] Concretely speaking, over 30% of Portuguese children between 7 and 9 years old are overweight and about 11% are obese.[17] A recent study (2013-2014) conducted by the Portuguese Association Against Childhood Obesity (APCOI - Associação Portuguesa Contra a Obesidade Infantil), which involved a sample of 18,374 children, revealed that: 33.3% of children aged between 2 and 12 years old are overweight, out of which 16.8% suffer from obesity. In Brazil, available data point toward the existence of 1 out of 3 children with a rate above the normal one, 21% are overweight and 15% obese.[18]

Although the genetic influence is clear, environmental and behavioural influence, related to familial, cultural and educational contexts, are currently regarded as playing a key role in the development of this disease. Hence it is not surprising that data from the European Childhood Obesity Surveillance Initiative[11] show, for instance, that: over 90% of Portuguese children eat fast-food, sweets and drink soda, at least four times a week; less than 1% of children drink water every day and only 2% eat fresh fruit on a daily basis; nearly 60% of children go to school by car and only 40% participate in extracurricular activities involving a certain level of physical activity. Based on this evidence, we can easily draw the conclusion that there is the need of an early preventive intervention, as an obese child is at risk of suffering from serious health problems during adolescence and as an adult: the child is more likely to develop cardiovascular diseases, high blood pressure, metabolic disorders such as diabetes, asthma, liver diseases, sleep apnoea and several types of neoplasias. According to the World Health Organization,[19] obesity is the second major cause of mortality across the world which can be prevented, following tobacco consumption. The question is: how and where can we implement a duly structured preventive procedure aimed at younger populations, such as children?

The International Union for Health Promotion and Education-IUHPE[20] stresses that what is important is to acknowledge that, on the one hand, this issue requires an interdisciplinary intervention strategy focused on prevention and, on the other, it must be based on a health promotion model directed towards empowerment and accountability of each citizen. In this sense, school is a privileged and vital place for health promotion, particularly regarding teaching and daily practice of healthy food intake and physical activity. Nonetheless, empowerment of young people to healthy decision making when it comes to making a choice and eating food may not be enough, particularly if the surrounding environment makes that choice difficult. If schools are places offering a food supply that is contrary to what is taught and proposed within classrooms, the teacher's and school's mission itself become difficult.[20] On the other hand, it is equally important to acknowledge that education for health must be planned and implemented based on paramount scientific evidence, without overlooking the specific characteristics of contexts, familial ones and others, to which it was conceived. Evidence-based health education "is the process of systematically finding, appraising and using qualitative and quantitative research findings as the basis for decisions in the practice of health education".[21]

One of the earliest scientific evidence which substantiated the relationship of behaviour with health was produced by the Alameda County Study (known as "ALAMEDA SEVEN" study), conducted in California in the 70s by Belloc and Breslow.[22] In a longitudinal research begun in 1965 and carried out for over 20 years, with the participation of 6928 adult Americans, it was found that seven healthy habits or practices were highly correlated with health and life expectancy of the respondents. These behaviours are known as the Alameda Seven: sleeping 7-8 hours per night; *having breakfast every day; not smoking; having a balanced diet and avoiding snacks; limiting consumption of or abstaining from alcohol drinks; exercising regularly; and maintaining an optimal or nearly optimal weight*. This study was thus an extremely important step to know the role of health behaviour in health and disease processes, where the role of ideal weight was already proving to be important.

Based on this background, we must bear in mind that an effective interdisciplinary intervention in the fight against childhood obesity and other practices behind other diseases shall have to be included and given priority in the domain of

the so-called Health-Promoting School, whose main goals are: promoting measures in support of health which generate knowledge and skills in cognitive, social and behavioural areas; and improving school scores.[9,20] School must be regarded as an environment in which health issues and views are used to complement and enrich educational priorities such as literacy and numeracy. The measures of schools promoting health must contribute to the acquisition of know-how, development of specific and generic competences in terms of understanding, analysis and summary of information, and in terms of the creation of solutions to local and global issues. Students must be provided with conditions that encourage learning and the use of personal and social skills, as well as the acquisition of health-promoting behaviours, which can stimulate learning.[20] This is the interdisciplinary principle on which the success of a School claiming to be a Promoter of Health will certainly rest. Nevertheless, obstacles still have to be overcome for the implementation of interdisciplinarity in classrooms, mainly the following: specific training of teachers, who are not prepared at the university to have an interdisciplinary approach when working; significant difference in language, views and methods used in the varied subjects in the field of Natural Science; and inexistence of areas and periods in institutions to reflect on, assess and implement innovations in education.[23]

Nonetheless, we must bear in mind that the preventive role does not end at school. The role of the family is definitively crucial as well. Regarding this aspect and pertaining to obesity control, Portugal, through its National Program for the Promotion of Healthy Eating (PNPAS, Programa Nacional para a Promoção da Alimentação Saudável), recommends:[24] *1)* strengthening the role of families, health care professionals and professionals in the teaching system for the promotion of healthy eating habits from the earliest possible age, starting with provision of information to pregnant women; *2)* access to quality information on eating habits, determinants and implications thereof is essential to set evidence-based priorities. Information systems in the domain of health must be able to regularly and systematically collect this kind of information; *3)* promotion of healthy eating habits requires working together with other sectors. Health care services need to collaborate with other sectors of society to prevent the obesity pandemic and promote healthy eating habits; *4)* poor quality food intake affects mostly children, elders and most socioeconomically vulnerable groups of the society, increasing health-related inequalities. Investment in the promotion of eating habits shall enable the reduction of health-related inequalities, as well as stimulate growth and local economies.

Conclusions

The reflections presented herein contextualize the concern regarding the high prevalence of childhood obesity at global level, particularly in Portuguese society. It should be noted that the growing impact that this pathology and complications thereof are beginning to have on health care services show the need to act and prevent these issues at an increasingly early age. New data reveal and confirm that unhealthy eating habits seem to appear since birth; these habits, after being established, seem to prevail and condition adolescence and adult years, leading us to consider intervention at early ages with pregnant women and families.[24] Within this framework, it became clear that we are dealing with a true epidemic rooted in behaviour against which we must fight urgently. As demonstrated, the keyword is early prevention, with the following specific features: *a)* increasing acknowledgement of the important role assigned to the players in the process of education for health, particularly health care professionals and teachers; *b)* action mandatorily focused on the family-child dyad; *c)* school regarded par excellence as a space and time for intervention, with the cultivation of an interdisciplinary approach, and *d)* promotion of an evidence-based intervention.

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