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Relationships between physical fitness and physical self-concept in Spanish adolescents

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Abstract

The objective of this study is to ascertain whether there is a direct association between physical fitness and the factors that determine the physical self-concept. The sample consisted of 53 schoolchildren of 14-15 years old. To evaluate the physical fitness, three tests were used. To evaluate the physical self-concept, the Physical Self Concept Questionnaire was used. An association was found between endurance and strength as components of physical fitness and the factors that determine the physical self-concept in the sample. Therefore, the adolescents achieving better scores on these tests will have a better physical self-concept. The same applies to the factors that determine the physical self-concept when they are related to each other, but not when they are related to flexibility.

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Keywords: Adolescence; Endurance; Flexibility; Physical Fitness; Physical Self-Concept; Strength

1. Introduction

The changes that occur in adolescence have an important influence on the development of a person, molding him or her into an adult (Shahar, Henrich, Blatt, Ryan and Little, 2003). Puberty is a major biological change during which there is a rapid increase in height, weight and a significant modification in body composition that will define how the human being will be physically and physiologically in adulthood, since the first stage is understood as the precursor of the second one (Richter, 2006). According to WHO (World Health Organization), the adolescent period is from 10 to 19 years old.

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1.1. Physical fitness and health in adolescence

The physical fitness is related to the ability to perform physical activity (Caspersen, Powell and Christenson, 1985). But there are many factors that might affect this ability to perform physical activity. Among them, physical inactivity and low physical fitness are determinant factors in the occurrence of certain diseases which are a major concern in today's' society, as it is the case of obesity (Moliner-Urdiales et al., 2010; Ochoa et al., 2007; Vicente-Rodriguez et al., 2008). Aerobic capacity and muscle strength are important indicators and predictors for disease and cardiovascular mortality risk. With this in mind, it is worth mentioning that the onset of this type of diseases, which mostly occur in adulthood, usually start appearing in early childhood or adolescence (McGill et al., 2000). Indeed, for some cases indicators of cardiovascular disease risk have been found for this age group (McGill et al., 2000; Warnberg, Moreno, Mesana, Marcos and Grp, 2004). Some of them can even predict future morbidity and mortality, as it is the case of childhood overweight (Must, Jacques, Dallal, Bajema and Dietz, 1992).

Similarly, some authors established in their research that the role of low physical fitness as a cardiovascular risk factor overweighs even the role of other well-established factors, such as dyslipidemia, hypertension or obesity (McGill, 1990).

The study of these factors during the adolescent period is, therefore, crucial for the diagnosis and prevention of the conditions associated with cardiovascular disease in adults. In this regard, several transversal studies have shown the relationship between physical fitness level and other cardiovascular risk factors in childhood and adolescence (Ekelund et al., 2001; Nielsen and Andersen, 2003). Similarly, important longitudinal studies have found that the level of physical fitness in adult life and the presence of other conventional cardiovascular risk factors (hypercholesterolemia, hypertension, etc.) are determined by the level of physical fitness that people have in childhood or adolescence.

It is noteworthy that the components of physical fitness can be divided into two groups: the former is related to health (consisting of cardiorespiratory endurance, muscular strength and endurance, body composition and flexibility) and the latter to sport performance (consisting of agility, equilibrium, coordination, speed, power and reaction time) (Caspersen et al., 1985).

Following this line of research and according to the Toronto Model of Physical Fitness, Physical Activity and Health, there is a close relationship between Physical Fitness and Health. As a result, the amount and type of physical activity will determine the level of physical fitness and, at the same time, the level reached will determine the type of activity to be performed (Shephard and Bouchard, 1994). Taking this into consideration and according to several studies, the physical self-concept plays a key role in the development of this level of physical fitness which can allow or cannot allow the realization of certain types of activities within a specified period of time and which can increase the positive influence it will have on the person's health (Ceschini, Andrade, Oliveira, Araujo, and Matsudo, 2009; Martinek, Cheffers and Zaichkowsky, 1978).

Consequently, to evaluate the future cardiovascular risk as early as possible, the above-mentioned assessment must necessarily begin in childhood or adolescence.

1.2. Physical self-concept and physical exercise

For decades, researchers have tried to relate self-esteem to a healthy lifestyle in adolescence. The line of research carried out in this regard argues that young people with low self-esteem perform particular behaviors which jeopardize their health. However, those with high self-esteem perform healthier behaviors. But despite the sheer variety of work in this area, the results obtained are confusing and inconclusive, thus implying that self-esteem may not be a valid predictor in the study of health behaviors. For this reason, nowadays there are many authors who suggest that the dimensions of self-concept are useful for this purpose (Pastor, Balaguer and Garcia-Merita, 2006).

Making reference to self-concept and, at the same time, establishing its relationship with physical exercise means to deal with one of the most popular lines of current research. The numerous benefits that the practice of physical activity produces at a physical and a physiological level have been already mentioned, but it is also worth highlighting the benefits that this practice produces at a psychological level (Steptoe and Butler, 1996; Wankel,