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Physical activity practice, body image and visual impairment: A comparison between Brazilian and Italian children and adolescents

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ABSTRACT

The aim of this study was to analyze the physical activity and body image of children and adolescents with visual impairment (VI) in Brazil and Italy. For this, 41 children and adolescents with VI (19 Brazilian and 22 Italian) aged 10.22 ± 2.19 years old (18 girls and 23 boys) answered the Physical Activity Questionnaire for Children (PAQ-C), the Offer Self-Image Questionnaire (OSIQ), and an instrument with information about the disability, body weight and height. We analyzed the relationship between data from PAQ-C and OSIQ, as well as the gender, level of disability (blindness or low vision) and country using independent Mann–Whitney test. Body mass index (BMI) values were higher for Brazilian youths, with more than half of them classified as overweight and obese. Italian youths exhibited values of body image that were more positive and only 27% presented overweight or obesity. Blind children and adolescents were less active than those with low vision, but no differences were found between countries or genders. In Brazil, we detected significant correlations ($p > 0.05$) between physical activity, body image and BMI, which more active youths presenting lower values of BMI and a better perception of body image. Physical activity seems to have a positive influence on body image and BMI for children and adolescents with VI, thus it should be encouraged especially for those with higher disability degrees.

1. Introduction

The prevalence of physical inactivity and obesity in children and adolescents is currently a major concern for public health authorities worldwide. Although some strategies have recently been developed in order to stimulate a healthier lifestyle for this population, it is still possible to observe a high prevalence of risk behaviors, which may cause negative effects in adulthood (Alhassan & Robinson, 2010; Bauman, 2004; Nelson & Gordon-Larsen, 2006).

For children and adolescents with disabilities, the high prevalence of physical inactivity is mainly attributed to lack of specific physical activity programs, accessibility and professional training (Kodish, Kulinna, Martin, Pangrazi, & Darst, 2006; Rimmer & Marques, 2012). The reduced opportunities for physical activity experiences outside formal programs is an aggravating factor that may be largely attributed to lack of information of the parents about their children's possibilities (Shields, Synnot, & Barr, 2012). Both these aspects certainly increase the risk for these youths become sedentary adults, and

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thus more likely to develop bone and muscle problems, obesity, cardiovascular diseases, and loss of autonomy to carry out daily activities.

Bittencourt and Hoehne (2006) argue that the difficulty to perform personal tasks and dependence are especially devastating for youths with visual impairment (VI), since the vision is considered a major factor of integration to the motor, perceptive and mental activities and its loss could promotes marked changes, reducing the ability of the individual to adapt to the society.

In a study with children and adolescents with several types of disabilities, aged between 6 and 20 years, Longmuir and Bar-Or (2000) found that those with VI had lower levels of physical activity when compared to others with motor disabilities. Furthermore, individuals with VI perceived more barriers to practice physical activity together with colleagues without disabilities, which, in turn, probably lose the motivation to perform such activities, hindering their participation.

Some studies have shown that children and adolescents with VI present levels of health-related physical fitness below the mean compared to individuals without disabilities with similar age (Greguol & De Rose Junior, 2009; Korach, Tennenbaum, Schnitzer, & Omoy, 2000). However, the authors regard that early and adequate stimulation besides wide and varied possibility of environment experimentation, would reduce largely such delays.

The lack of opportunities for physical activities during childhood and adolescence may have strongly negative effects also on the body image (Gonçalves, Campana, & Tavares, 2012). Adolescence generally is a critical period for body image formation and this picture may be even more problematic in adolescents with disability. Some recent studies have shown that adolescents with VI, especially girls, presented a more negative perception about their body image than those without disabilities (Pinquart & Pfeiffer, 2012). Thus, physical activity practice could be a healthy strategy for the development of a more positive body image, which certainly will lead to increase of self-esteem of the adolescents.

The access to the physical activity programs for children and adolescents with disabilities is different in each country. In Italy, one of the first countries in the world to promote the full inclusion of students with disabilities in regular schools, children and adolescents are more likely to social participation (Gelati, 2004). On the other hand, in developing countries as Brazil, where the inclusion of students with disability in the school system is recent and still poorly consolidated, many young with disabilities have few opportunities to participate in the physical activity programs, which leads to greater difficulties in social inclusion.

Thereby, given the topic relevance, the purpose of this study was to analyze the physical activity practice among children and adolescents with VI and its influence on body image. In addition, we compared data obtained by youths in Brazil and Italy.

2. Materials and methods

2.1. Participants

Forty-one children and adolescents (19 Brazilian and 22 Italian) participated in this study, including 18 girls and 23 boys. All participants were aged between 8 and 14 years, VI bearing from birth, and were selected from institutions that offered educational activities for people with visual impairments in southern Brazil and northern Italy. All participants should present a medical report, describing the classification of visual impairment. This medical report was provided by the institutions attended by children and adolescents. The study excluded those who presented other associated disabilities. After get information about the procedures of the research, the participants and their parents signed an informed consent form. The State University of Londrina Ethical Committee approved this study (approval number 24510).

2.2. Instruments

Children, adolescents and one of their parents initially filled a questionnaire with basic information about their disability (whether blindness or low vision), age, parents' educational level, youths' body weight and height. Based on body weight and height measurements, we calculated the body mass index (BMI). Then, youths answered the Physical Activity Questionnaire for Older Children – PAQ-C (Crocker, Bailey, Faulkner, Kowalski, & Mcgrath, 1997), a self-administered 7-day recall instrument, divided into nine items that aim to evaluate the amount of the moderate to vigorous physical activity (MVPA) performed. Final score ranged 1–5 points, with 1 indicating low MVPA, whereas a score of 5 indicated high MVPA.

The third instrument responded by children and adolescents was the Offer Self-Image Questionnaire – OSIQ (Offer, Ostrov, Howard, & Dolan, 1982), particularly the body image scale. This Likert scale consisted of seven statements, each with six levels of response, ranging from 1 (describes me very well) up to 6 (does not describe me at all). Final score ranged 7–42 points, with the highest value representing a positive self-image.

On a scheduled day with the coordination of the institution, the researcher explained to the parents and their children the objectives and procedures of the research. Then the questionnaires were administered individually. Parents responded all questionnaires by their selves, but children and adolescents were supported by the researcher to fill in all the instruments. At the end of the study, a meeting was scheduled with the coordinators of the institutions, parents and children to the explanation of results.