

Brief Report

Exploring psychosocial correlates of physical activity among children and adolescents with spina bifida

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Abstract

Background: To enhance physical activity of children with spina bifida, it is important to investigate the correlates of physical activity to support the development of interventions to promote active lifestyles.

Objective: This study aimed to identify psychosocial correlates of physical activity among children and adolescents with spina bifida.

Methods: A survey was conducted with 31 students (15 boys), aged 10–17 years with spina bifida. A questionnaire was used to collect data of physical activity, demographic and psychosocial variables (attitudes, sports goal orientation and perceptions). Unadjusted and adjusted binary logistic regressions were performed to examine the relationship of psychosocial factors and physical activity participation. Data were collected in 2013.

Results: Only 38.7% reported to participate in both organized and non-organized physical activity. Results showed no relationship between participation in organized and non-organized physical activity and psychosocial correlates. The result of the adjusted regression analysis show that perception of competence (OR = 9.55, 1.06–85.99, $p < 0.05$) was the only variable positively associated with participation in non-organized physical activity.

Conclusions: Most of the participants reported that they did not participate in physical activity regularly. Psychosocial variables were not related with physical activity, except perception of competence. Studies with bigger samples are needed, focused on the same and in others factors to identify the predictors of physical activity of young people with spina bifida. © 2015 Elsevier Inc. All rights reserved.

Keywords: Spina bifida; Physical activity; Disability; Correlates

The benefits of physical activity are well documented. Among children and adolescents, it improves bone mineral density, muscular strength and endurance, and mental health.^{1,2} Regular participation in physical activity is also related with aerobic capacity, which is associated with lower risk factors of cardiovascular disease,³ and it is recognized as a relevant marker of cardiovascular health.⁴ Nevertheless, studies reported that many young people are not active enough to benefit their health.^{5–7} The situation is concern among people with physical and intellectual disability. This group of people is more at risk of being less active or sedentary than people without disability,^{8,9} because of their pathology and also, because facilities do not provide conditions for persons with disabilities to use them properly.

Among people with disabilities there are young people with spina bifida. Spina bifida is a congenital abnormality characterized by the incomplete closure of the spinal

column. In many cases this pathology results in nerve damage and physical disabilities, including lower limb paralysis and disrupted bladder or bowel function. These conditions limit the possibilities to engage in physical activity compared to nondisabled people,¹⁰ and consequently people with spina bifida have low aerobic capacity and muscle strength,¹¹ which hinders the performance of daily tasks.

Given the low levels of physical activity and physical function¹² and the increasing presence of obesity,¹³ Short and Frimberger¹⁰ speculate whether the components of metabolic risk would be adversely affected by the presence of spina bifida. Thus, it is recommended that people with spina bifida should engage in habitual physical activity, since the literature supports that it improves physical functions.²

Recently in Portugal, the need to know more about physical activity practice and effects on populations with disabilities has emerged, especially since the special education law was declared in 2008, stating that all children should be in regular schools and have the same opportunities.¹⁴ Because of this, the Portuguese educational setting is facing now several challenges. One of these challenges is to design, implement and monitor appropriate intervention

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for students with disabilities. Schools should offer equal opportunities for youngsters to engage in physical activities in order to promote social development and health benefits. Thus, it is expected that in a school context all school-age children should experience physical activity. To accomplish this goal, and, consequently, improve social participation, it is necessary to have a broader overview about what contents and skills should be taught and enhanced, providing instructions on physical activity or sport-related health benefits and special physical education programs and/or school sports.

To improve the levels of physical activity of children and adolescents with spina bifida, it is important to investigate the correlates of physical activity to support the development of effective interventions to promote active lifestyles. Although the calls for research of physical activity determinants among individuals with disabilities is now long standing,¹⁵ so far little is known about the factors related to physical activity participation in different contexts among children and adolescents with spina bifida. Physical activity can take place in leisure time as non-organized activity (non-guided/supervised by a trainer or a teacher), or organized (guided/supervised by a trainer, teacher or other sports authority). The social cognitive theory¹⁶ helps to understand physical activity behaviors by partitioning behavioral influences into different domains (e.g. demographic, psychological, and social factors). Therefore, the present study aimed to identify demographic and psychosocial correlates of physical activity in leisure time among children and adolescents with spina bifida in Portugal, in order to implement an appropriate school-based intervention to promote more active and healthier lifestyles in these populations.

Method

Participants

The present study was conducted through the Portuguese Association of Spina Bifida and Hydrocephalus (ASBHIP). The members of this association have a spina bifida diagnosis without cognitive impairment and attend regular elementary and secondary schools. It is part of an ongoing study to characterize the lifestyle of children and adolescents with intellectual and physical disabilities, in order to implement an appropriate school-based intervention to promote an active and healthy lifestyle among youth special populations. For the purpose of this study, participants included 31 children and adolescents with Spina bifida (15 boys, 16 girls), ranging in age from 10 to 17 ($M_{\text{age}} = 13.9 \pm 2.4$). The study protocol received approval from institutional review board of the Faculty of Human Kinetics at University of Lisbon, Portuguese Minister of Education, and the Portuguese Commission of Data Protection. The study was conducted according to ethical

standards in sport and exercise science research.¹⁷ The ASBHIP's ethics committee gave its consent, legal guardians gave written informed consent, and students provided assent. Data collection was during the springtime of 2013.

Measures

Physical activity

In order to determine students' participation in physical activity a list of 21 leisure time activities that included participation in organized and non-organized physical activities was used. This instrument was developed by Telama et al,¹⁸ and has been used in national and international studies.^{19,20} Responses were dichotomous (yes or no). The test-retest reliability of the leisure time activities was carried out within a one-week interval. Using intraclass correlation coefficient (ICC), the reliability was high ($ICC = 0.90-0.95$). Parents' physical activity practice was reported using one single item for the father and one for the mother, the same as used previously.²¹ For the present study the responses were dichotomized ("practice every week" or "do not practice"). For the peers' physical activity, students were asked how often do their friends engage in physical activity, and how often do they engage in physical activity when they are with friends. Answers were given on a 5-point scale (1 = never to 5 = daily).

Body mass index (BMI)

Weight and height were reported by children's and adolescents' parents. The information was provided based on clinical reports. BMI was calculated by dividing weight by height square ($BMI = m/h^2$).

Socioeconomic status (SES)

The SES was calculated according to parental occupation and educational level. Parents were classified as lower, middle and upper class. For that classification parents' occupation titles were regrouped. The lower class included skilled and unskilled manual workers, farmers, and fishermen; the middle class included service occupations such as nonprofessional health service workers, office clerks, and salespeople; the upper class consisted of business-owners, executives, university-educated specialists and professionals.²²

Attitudes

Students' attitudes toward physical education and physical activity were asked via two questions. The questions asked were, respectively: "What do you think about your physical education lessons?", and "What do you think about practicing physical activity?", as used in other studies.^{23,24} Answers were given on a 5-point scale ranging from, "I dislike it very much" to "I like it very much." These items have been shown to have high reliability, with intraclass correlation coefficients (one-week interval) of 0.9.²⁵

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