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Original Article

Prevalence of nonspecific lumbar pain and associated factors among adolescents in Uruguaiana, state of Rio Grande do Sul ☆,☆☆

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ARTICLE INFO

ABSTRACT

Objective: To identify the prevalence of nonspecific lumbar pain and associated factors among adolescents in Uruguaiana, state of Rio Grande do Sul.

Methods: This was a cross-sectional school-based study conducted among adolescents aged 10–17 years who were enrolled in the day shift of the municipal and state educational systems of Uruguaiana. This study evaluated 1455 adolescents. The data-gathering procedures involved two stages. Firstly, a questionnaire on sociodemographic indicators, behavioral patterns and habits of the daily routine and history of nonspecific lumbar pain was applied. Subsequently, height, body mass, flexibility and abdominal strength/resistance measurements were evaluated. To analyze the data, univariate, bivariate and multivariable methods were used and the significance level was taken to be 5% for all the tests.

Results: The prevalence of lumbar pain among the adolescents evaluated was 16.1%. Grouped according to sex, the prevalence among males was 10.5% and among females, 21.6%. The variables of sex, body mass index, abdominal strength/resistance and physical activity level presented statistically significant associations with nonspecific lumbar pain. In the adjusted analysis, sex (OR = 2.36; $p < 0.001$), age (OR = 1.14; $p < 0.001$) and body mass index (OR = 1.44; $p = 0.029$) maintained significance in the final model.

Conclusions: Female adolescents of older age and who presented overweight or obesity had higher chances of developing nonspecific lumbar pain.

Prevalência de dor lombar inespecífica e fatores associados em adolescentes de Uruguaiana/RS

RESUMO

Palavras-chave:
Dor lombar

Objetivo: Identificar a prevalência de dor lombar inespecífica e os fatores associados em adolescentes de Uruguaiana/RS.

Métodos: Estudo transversal de base escolar, feito com adolescentes de 10 a 17 anos matriculados no turno diurno das redes municipal e estadual de ensino de Uruguaiana/RS. Foram avaliados 1.455 adolescentes. O procedimento de coleta dos dados ocorreu em duas etapas. Inicialmente foi aplicado um questionário sobre indicadores sociodemográficos, comportamentos e hábitos da rotina diária e histórico de dor lombar inespecífica. Posteriormente foram avaliadas as medidas de estatura, massa corporal, flexibilidade e força/resistência abdominal. Para a análise dos dados foram usados os métodos univariado, bivariado e multivariável e foi considerado nível de significância de 5% para todos os testes.

Resultados: A prevalência de dor lombar nos adolescentes avaliados foi de 16,1%. Por sexo, o masculino apresentou uma prevalência de 10,5% e o feminino, de 21,6%. As variáveis sexo, índice de massa corporal, força/resistência abdominal e nível de atividade física apresentaram associação estatisticamente significativa com a dor lombar inespecífica. Na análise ajustada o sexo (OR = 2,36; p < 0,001), a idade (OR = 1,14; p < 0,001) e o índice de massa corporal (OR = 1,44; p = 0,029) mantiveram significância no modelo final.

Conclusões: Adolescentes do sexo feminino que apresentaram idades mais elevadas e estavam com sobrepeso ou obesidade têm mais chances de desenvolver dor lombar inespecífica.

Introduction

Nonspecific lumbar pain is considered to be one of the main health problems in industrialized countries[1] and it has increased considerably over recent decades among adolescents.[2] The earliest cases of nonspecific lumbar pain occur in the age group from 11 to 12 years, with a gradual increase of approximately 10% per year, until reaching around 50% of adolescents at the age of 18 years.[3] This problem is even more significant when it is perpetuated into adulthood.[4]

It is difficult to identify the etiology of lumbar pain because it is manifested under various conditions[5] and is often of multifactorial nature.[6] Among other causes, lumbar pain presents an association with individuals' lifestyles, such that overweight,[7–9] sedentarism[8,9] and remaining in certain positions for long periods of time[7,10] are triggering factors for this problem.

In this context, a study conducted among school children in Florianópolis, state of Santa Catarina, showed that 25.5% of the individuals who feel lumbar pain indicate that the triggering factor for their painful state consists of situations in which they remain in a seated position for long periods.[10] In addition, adolescents who occupy their time doing activities that allow diversity of posture present a chance of developing lumbar pain that is 2.3 times lower than the rate presented by their sedentary peers.[11]

On the other hand, high levels of physical activity are positively associated with the appearance of nonspecific lumbar pain.[3,4,7] However, this association needs to be analyzed cautiously, since continuous well-guided physical activity practices contribute toward better posture and lower incidence of lumbar pain.

It is important to emphasize that lumbar pain is not a specific pathological condition but, rather, a symptom that may be related to a disease[12] and which, with the passage of time, may result in a degenerative musculoskeletal disorder[2,7] with the capacity to reduce the individual's fitness for work.[13] Thus, knowledge of the etiology of lumbar pain and the associated factors in adolescents may help to prevent and understand the problem in adults.[14]

The present study had the objective of analyzing the prevalence of nonspecific lumbar pain and the associated factors among adolescents in Uruguaiana, state of Rio Grande do Sul (RS).

Method

This was a school-based cross-sectional study conducted among adolescents aged 10–17 years who were enrolled in the daytime shift of the municipal and state school network of Uruguaiana, RS. This study formed part of a larger project developed in 2011, under the title "Habitual physical activity and associated factors among school children in Uruguaiana, RS", which was approved by our institution's research ethics committee (protocol 042/2010) and followed the guidance of Resolution 196/96 of the National Health Council.

According to information from the elementary school census of 2010,[15] the study population comprised 15,210 adolescents in the age group determined. To make the sample calculation, the following procedures were used: prevalence of 50%, since the larger project addressed multiple outcomes; 95% confidence interval (95% CI); sample error of 3%; design effect (*deff*) of 1.5; and an additional amount of 15% to make up for possible losses and refusals. Through using these criteria, it was estimated that it would be necessary to assess 1398 school children. The sampling criterion used was probabilistic in clusters, in which each school was considered to be a cluster. All the public schools in the municipality participated in the draw and had the same chances of participating, according to the number of students enrolled in the age group from 10 to 17 years. To reach the estimated number of adolescents, it was necessary to draw 10 schools: nine in the urban area (seven state schools and two municipal schools) and one in the rural area. All the school children between the ages of 10