



Brazilian Journal of Physical Therapy

<https://www.journals.elsevier.com/brazilian-journal-of-physical-therapy>



ORIGINAL RESEARCH

Knee pain in adolescents: prevalence, risk factors, and functional impairment

Mirelle O. Saes^{a,*}, Maria C.F. Soares^{a,b}

^a Programa de Pós-Graduação em Ciências da Saúde, Universidade Federal do Rio Grande (UFRG), Rio Grande, RS, Brazil

^b Instituto de Ciências Biológicas, Universidade Federal do Rio Grande (UFRG), Rio Grande, RS, Brazil

Received 6 April 2015; received in revised form 20 October 2015; accepted 6 April 2016

KEYWORDS

Musculoskeletal pain;
Physical therapy;
Adolescent

Abstract

Objective: To investigate knee pain prevalence, associated factors, and functional impairment among adolescents.

Method: This was a cross-sectional study conducted between May and June 2014 with a random sample of 619 adolescents aged between 10 and 17 years. Knee pain prevalence was investigated using the Nordic Questionnaire for Osteomuscular Symptoms and a number of independent variables (demographic data, nutritional status, form of carrying backpacks, and pain during and after walking) obtained by self-report questionnaires. Physical impairment of the knee was assessed using the Brazilian version of the Knee injury and Osteoarthritis Outcome Score questionnaire. Poisson regression analysis was used to estimate the ratios of crude and adjusted knee pain association with the investigated factors. ANOVA and Kruskal–Wallis tests were used to compare median functional impairment.

Results: Knee pain prevalence over the last 7 days was 22.6%. Factors having significant association with the outcome were: being between 12 and 14 years old (PR: 1.67; 95% CI: 1.07–2.58; $p < 0.01$), being between 15 and 17 years old (PR: 2.44; 95% CI: 1.51–3.94; $p = 0.01$), and not doing physical education at school (PR: 0.54; 95% CI: 0.35–0.82; $p = 0.01$). Total functional capacity among adolescents with pain was significantly lower among girls (68.7 points; PD \pm 15.1) when compared with boys (74.3 points; PD \pm 12.7) ($p = 0.02$). The mean value of disabling pain was lower (55.1 points; PD \pm 12.3) among adolescents who were physically active in their leisure time compared to those who were insufficiently active (60.4 points; PD \pm 12.4) ($p = 0.02$).

* Corresponding author at: Avenida Vinte e Cinco, 755, 362, Três Vendas, CEP 96065-620, Pelotas, RS, Brazil.
E-mail: mirellesoes@gmail.com (M.O. Saes).

<http://dx.doi.org/10.1016/j.bjpt.2016.04.001>

1413-3555/© 2017 Associação Brasileira de Pesquisa e Pós-Graduação em Fisioterapia. Published by Elsevier Editora Ltda. All rights reserved.

Please cite this article in press as: Saes MO, Soares MC. Knee pain in adolescents: prevalence, risk factors, and functional impairment. *Braz J Phys Ther.* (2017), <http://dx.doi.org/10.1016/j.bjpt.2016.04.001>

Conclusion: The results of this study show that knee pain among adolescents with no previous history should be investigated, particularly among older adolescents who do not have physical education at school, since it is highly prevalent and can result in functional impairment. Regarding functionality, more attention should be given to girls and adolescents who were physically active in their leisure time.

© 2017 Associação Brasileira de Pesquisa e Pós-Graduação em Fisioterapia. Published by Elsevier Editora Ltda. All rights reserved.

Introduction

Knee pain is a common clinical symptom in the adult population and affects half of the population aged over 50.¹ Knee pain results in substantial costs for the health system given that one in every six individuals with knee pain will have at least one medical appointment per year and one third of them will have disability.^{2,3} Although knee pain prevalence is lower among adolescents, it does provide reason for concern and can be a precursor of this type of pain in adult life.³ Between 19% and 31% of adolescents report knee pain and this complaint may arise from traumatic injuries or may be insidious.⁴⁻⁶

The literature has shown that knee pain does not always have a favorable prognosis. About 50% of adolescents continue to report pain after a year of investigation and this is significantly harmful to their quality of life.⁷ After following up a group of women with insidious onset of knee pain during a 20-year period, Nimon et al.⁸ found that 78% continued to report having knee pain at the end of the study. In addition, knee pain can cause functional impairment in adolescents, limiting or interrupting everyday activities and consequently reducing academic performance.⁹

The main factors associated with unspecified knee pain among adolescents are being female, doing sports activities, being obese, and being older.^{7,10,11} Rathleff et al.⁷ report that girls have four times higher probability of having knee pain. In addition, doing physical activities during leisure time more than twice a week is also associated with increased probability of knee pain. Greater knee pain prevalence among obese people is associated with reduced joint space and increased Q angle, thus compromising the kinematics of this joint.¹² One study reported that greater knee pain problems occur in older adolescents as a result of puberty and greater exposure time to associated factors.¹³ Some external factors have also been considered as predictors of knee pain. These include physical exertion related to improper use of backpacks and remaining in a sitting position for long periods of time while using videogames or computers.¹¹

However, the majority of the studies cited are of clinical trial design and assess individuals diagnosed as having orthopedic knee conditions. There are few national studies that have an epidemiological approach to musculoskeletal knee pain among adolescents and that assess their functional impairment.

Therefore, it is relevant to conduct a study that provides more information about adolescent musculoskeletal health, with emphasis on knee pain, thus increasing knowledge about associated factors underlying the emergence

of knee pain. The objective of this study was to investigate knee pain prevalence, associated factors, and resulting functional impairment among adolescents attending municipal schools in a city in southern Brazil.

Method

This is a cross-sectional study with adolescents enrolled at schools in the city of Rio Grande, Brazil. This city is located in the south of Brazil and has a population of approximately 206,161 inhabitants, with 57,563 students attending public schools.¹⁴

All five institutions that took part in the study were distributed in different neighborhoods of the city and were randomly selected from a list of public elementary schools involved in projects conducted by Universidade Federal do Rio Grande (UFRG), Rio Grande, RS, Brazil.

The sample size was calculated using the following parameters: 19% knee pain prevalence, 5% alpha error, and 3.5% precision. Controlling for gender, this resulted in a sample of 482 subjects. After adding 10% for losses and 15% for confounding factors, the total sample size needed was 610 adolescents.

Students aged 10–17 were selected randomly from each 5th to 9th grade class register. The adolescents were selected randomly from the class register, ensuring proportionality in relation to the number of enrolled students, the number of classes, and the size of the school. Proportionality was calculated taking into consideration the size of the school and the number of adolescents of eligible age for the study.

Students who were not able to understand and answer the data collection instrument and those who used walking aids were excluded from the study. These students were identified prior to data collection based on information provided by the school administration.

The study was conducted between May and June 2014. Data collection took place at the schools during normal class time in an especially reserved place defined beforehand by the school administration. Three trained interviewers collected data. The interviewers were final-year physical therapy degree students with previous research experience during their undergraduate studies. They also received 20 h of theoretical and practical training from the first author of this study. The last stage of the interviewers' training was the application of the pilot study under the continuous supervision of the researcher in charge.

The first stage of data collection consisted of measuring body weight and height and the weight of the students'

Download English Version:

<https://daneshyari.com/en/article/8929012>

Download Persian Version:

<https://daneshyari.com/article/8929012>

[Daneshyari.com](https://daneshyari.com)