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Original Research

Sports injury pattern in school going children

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ABSTRACT:

Background: Among the most prevalent complications of root canal treatment is postoperative pain. The goal of this study was to compare the severity of postoperative pain after root canal preparation with RaCe rotary system as well as hand K-Flexofile. **Materials and methods:** With 50 mandibular molars in each group, the sample size was of 100 subjects. The study comprised participants who needed endodontic treatment for asymptomatic irreversible pulpits in their mandibular first or second molars with normal periapical radiography images. Periapical radiographs were processed and preserved using a specialised scanner and software interface before being used for additional examinations with Rinn XCP devices and a digital radiography system. A physician divided the 100 subjects into two groups of 50 subjects each after choosing the subjects. Gender as well as the number of mandibular first and second molars with three and four root canals were matched between the two groups. **Results:** In both manual and rotary groups, severity of postoperative pain significantly decreased from the beginning to the end at all evaluated time intervals ($P<0.001$). However, comparison of pain severity between the RaCe rotary and hand K-Flexofile groups did not reveal any significant differences between the two groups ($P=0.79$). In this context, the mean pain severity scores four hours after treatment were 28.34±5.61 in the RaCe group and 36.57±6.21 in the K-Flexofile group. After eight hours, the pain severity scores were 22.32±4.56 and 29.45±4.72 in the rotary and hand file groups, respectively. The pain severity at both intervals in the rotary group was less than the hand file group, but the difference was not statistically significant ($P>0.05$). At twelve hours, twenty-four hours, forty-eight hours and seven days intervals, the variations in pain severity among the 2 groups were not noteworthy ($P>0.05$) **Conclusion:** There were found no numerically considerable variations in pain severity among the two groups at any intervals.

Key Words: Manual Instrumentation, Postoperative Pain, Root Canal Preparation, Rotary Instrumentation.

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INTRODUCTION

Participation of school going children in sports has increased tremendously in recent times.[1] Usually considered as an effective method of physical fitness, recreation and lucrative career, more and more children are now engaging in competitive and organised sports. The participation in sports and related activities ensures a balanced development of the child and a good health.[2] However the increase in competitive activities has translated into a higher incidence of sports injuries in school going children. The problem is further compounded by the lack of proper resources and awareness regarding prevention and management especially in developing countries.

Musculoskeletal injuries are the most common injuries in youth sports.[3] Growth spurt, maturity-associated variation and lack of complex motors skills needed for certain sports are among the risk factors that may play an important role in the growing athlete.[4,5] An epidemic of both acute and overuse injuries has been considered, as children make the transition for adolescence.[6] Enhanced environment for injury can occur and several studies reported structural and tissue changes that may contribute to this situation.[7-10]

Hence, this study was conducted to assess the sports injury pattern in school going children.

MATERIAL AND METHODS

This study was a cross-sectional survey that relied on the questionnaire being completed by the participating schools. The study's goal was to estimate the frequency and kind of sports-related injuries experienced by students. The study included all school-age participants who played competitive sports in the age range of 11 to

18 years. Literature on sports injuries has a hazy definition. For the purposes of this study, an injury was defined as the degree of harm that made it difficult for a participant to workout, play, or study because of pain or other symptoms. After performing a pilot research with data on demographics and injury statistics, a self-assessment questionnaire was created and standardised. These were sent to several schools in the area, where physical education (sports) teachers gave them to wounded kids who were participating in competitive sports. Both the parents of the students and the school administration gave their informed consent. Due to the low memory reliability of younger children, questionnaires for children under the age of 14 were filled out by a parent, guardian, or sports teacher at the child's school. For each sport, an incidence rate was determined and analysed independently. Because we did not account for total number of injuries but total number of injured cases, the results of this survey treated clinical incidence and epidemiologic incidence proportion as equal. Data were descriptively analysed and are shown as survey response frequencies. Data analysis was done using SPSS version 17 statistical software.

RESULTS

The study included 100 students in total out of which 80 were in the age group 11–18 years. 70 students were found to be participating in different categories of sports. Amongst these, 25 were found to have injuries during the current year of school.

Table 1: age-wise distribution of subjects.

Age group	Number of subjects	Percentage
11-12	09	09%
13-14	20	20%
15-16	61	61%
17-18	10	10%
Total	100	100%

Table 2: prevalence of injuries among subjects in current year.

Prevalence of injuries	Number of subjects	Percentage
Present	25	25%
Absent	75	75%
Total	100	100%

The injury frequency of 25 young injured sports children was calculated to be 35.71% among 70 participating young athletes. Amongst total children surveyed, the largest group was constituted by children of 15–16 years of age comprising of 61 subjects. However, the injury frequency was highest in age group 17–18 years. Basketball was the most commonly played game while Kabaddi carried the highest risk of injury. Sprain was the commonest type of injury suffered by the players and knee was the most common anatomical site of injury. 60% of the injured children (15/25) attributed their injury to poor ground condition while other 20% (5/25) to faulty techniques. Rest attributed their injuries to poor fitness levels, improper use of equipment and other reasons.

DISCUSSION

Injuries in school age children from different backgrounds have a specific identity, being age, SP level and maturation important predictors of body area injury location and injury types.[11] Each sport group presented a specific injury profile and PHV proved to be an important milestone for the evaluation of the injury pattern in adolescents of both sexes.[12] Due to the variation observed in growth and maturation between adolescents, chronological age turns out to be a less informative indicator for injury risk. Inter-individual biological maturation variability, corresponds to inter-individual readiness for sport acquisitions and specific vulnerability to certain injuries.[13]

Sports injury can be defined in varied ways. It can be defined as any injury sustained during sporting activity or exercise.[14] A Sports injury may also be labelled so if it requires treatment by a health care professional, either in person or by telephone.[15] We however feel that both these definitions don't allow estimating the true incidence because the former will always overestimate and the latter underestimate the incidence.

Hence, the current study was conducted to assess the sports injury pattern among school going children.

In this study, 100 students in total were enrolled with their age ranging from 11–18 years. 70 students were found to be participating in different categories of sports. Amongst these, 25 were found to have injuries during the current year of school. The injury frequency of 25 young injured sports children was calculated to be 35.71% among 70 participating young athletes. Amongst total children surveyed, the largest group was constituted by children of 15–16 years of age comprising of 61 subjects. However, the injury frequency was highest in age group 17–18 years. Basketball was the most commonly played game while Kabaddi carried the highest risk of injury. Sprain was the commonest type of injury suffered by the players and knee was the most common anatomical site of injury. 60% of the injured children (15/25) attributed their injury to poor ground condition while other 20% (5/25) to faulty techniques. Rest attributed their injuries to poor fitness levels, improper use of equipment and other reasons.

Abbas Esmaeili et al.[16], in their study, showed an overall incident rate of 22.2 injuries per 1000 persons-year-at-risk among senior secondary pupil of Iranian community. They also observed that the majority of injuries in the school sports were mild and approximately one in 400 injury related fatalities among children 5–19 years occurred at school.

Sorenson et al.[17], in their study, showed sports and physical activity related injury rates of 20 per 1000 children at the age of 6, to 120 per 1000 children at the age of 14. This preponderance of injuries in adolescent

years reflects a number of maturational and skeletal changes which occur during this time.[18] Reduced motor performance has been observed in the adolescent years[19], skeletal integrity may be compromised during this time of rapid growth with longitudinal bone growth occurring temporarily at the expense of bone strength, the onset of sex hormones which marks adolescence results in increased muscle bulk, particularly in males and this combined with increased aggression and risk taking behaviour, may also explain the increased risk of sports injury associated with contact or collision sports with increasing age.

As observed by others,[20,21] sprain was observed to be the most frequent injury type occurred in lower extremities including mainly knee and ankle joints and sports which involve high degree of sudden turns and forceful jumping.

CONCLUSION

The region has a greater than normal incidence of sports injuries when compared to global figures. The findings indicate the necessity for a nationwide surveillance system, which should be implemented when appropriate management and injury prevention strategies are put in place.

REFERENCES

1. Sharma P., Luscombe K.L., Maffulli N. Sports injuries in children. Trauma. 2003;5:245–259.
2. Shephard R.J. Physical activity and the child. Sports Med. 1984;1(3):205–233.
3. Patel D, Nelson T. Sports injuries in adolescents. Med Clin N Am. 2000;**84**(4):983–1007.
4. Adirim T, Cheng T. Overview of injuries in the young athlete. Sport Med. 2003;**33**(1):75–81.
5. Maffulli N, Caine D. The Epidemiology of children's team sports injuries. Med Sport Sci. 2005;**49**:1–8.
6. Gerrard D. Overuse injury and growing bones: the young athlete at risk. Br J Sports Med. 1993;**27**(1):14–18.
7. Best T. Muscle-tendon injuries in young athlete. Clin Sport Med. 1995;**14**(3):669–686.
8. Baxter-Jones A, Maffulli N, Helms P. Low injury rates in elite athletes. Arch Dis Child. 1993;**68**(1):130–132.
9. Merkel D. Youth sport: positive and negative impact on young athletes. Open Access J Sport Med. 2013
10. Micheli LJ, Klein JD. Sports injuries in children and adolescents. Br J Sports Med. 1991;**25**(1):6–9.
11. Costa e Silva L, Fragoso MI, Teles J. Physical activity-related injury profile in children and adolescents according to their age, maturation, and level of sports participation. Sports Health. 2017;**9**(2):118–125.
12. Costa e Silva L, Fragoso I, Teles J. Injury profile in Portuguese children and adolescents according to their level of sports participation. J Sport Med Phys Fit. 2018;**58**(3):271–279.
13. Rosa B, Asperti A, Helito C, Demange M, Fernandes T, Hernandez A. Epidemiology of sports injuries on a collegiate athletes at a single center. Acta Ortop Bras. 2014;**22**(6):321–324.
14. Van Mechelen W., Hlobil H., Kemper H.C.G. Incidence, severity, aetiology and prevention of sports injuries. A review of concepts. Sports Med. 1992;14(2):82–99.
15. Knowles S.B., Marshall S.W., Guskiewicz K.M. Issues in estimating risk and rates in sports injury research. J Athl Train. 2006;41(2):207–215.
16. Esmaeili A., Vazirineja R., Ebrahiminejad A. One-year incidence rate of injuries among secondary school pupils in an Iranian community. Pak J Med Sci. 2008;24(2):236–240.
17. Sorenson L., Larsen S.E., Rock N.D. The epidemiology of sports injuries in school aged children. Scand J Med Sci Sports. 1996;64(6):281–286.
18. Emery C.A. Risk factors for injury in child and adolescent sport: a systemic review of the literature. Clin J Sport Med. 2003;13:256–268.
19. Visser J., Geuze R.H., Kalverboer A.F. The relationship between physical growth, the level of activity and the development of motor skills in adolescents: differences between children with DCD and controls. Hum Mov Sci. 1998;17:573–608.
20. Ekstrand J., Gillquist J. Soccer injuries and their mechanism: a prospective study. Med Sci Sports Exerc. 1983;15:267–270.
21. Sen J. Incidence of popular ball game injuries in Indian pre and post adolescent boys. Int J Appl Sports Sci. 2005;17(2):1–8.