Available online at www.sciencedirect.com

SciVerse ScienceDirect

Procedia - Social and Behavioral Sciences 82 (2013) 274 – 277

Procedia
Social and Behavioral Sciences

World Conference on Psychology and Sociology 2012

Comparison of Children and Youth Gymnastic Injuries Via Sport Medicine Federation Injury Surveillance System in Iran, 2009-2010

Lotfali Pourkazemi [a], Mojtaba Ebrahimi Varkiani [b]*, Mohammad Hossien Alizadeh [b]

[a] *Sport Medicine Federation, Tehran, Iran*
[b] *University of Tehran, Tehran, Iran*

Abstract

The present study purposed to compare the sport injuries of child and youth gymnastic athletes via the data of Sport Medicine Federation Injury Surveillance System of Iran in 2009 and 2010. A retrospective analysis was conducted of the data for children and youth gymnastic athletes presented to the injury surveillance system in two years. Mann-Whitney *U* test was used with the significance level of $p < 0.05$. There was a significant difference between children and youth injuries ($p = 0.001$). Boys' and girls' injuries were significantly different ($p = 0.034$), however, it was not significant between men and women ($p = 0.894$). Upper extremity was the most frequently injured body region in all age and sex groups except men. Forearm, elbow and wrist were the most frequently injured body parts. As a results, children are more susceptible to injury in gymnastic in Iran. Thus, they should be paid attention more in preventive programs and measures.

Selection and peer review under the responsibility of Prof. Dr. Kobus Maree, University of Pretoria, South Africa.

Keywords: Sport Injury, Gymnastic, Children, Youth, Surveillance System.

1. Introduction

Gymnastics is a sport dating back to the Egyptians in 2000 B.C. It is a sport that most of its participants are youth and needs a high physical requirements of strength and flexibility (Schiff, Harmer, Caine, & Commission, 2009). The increased participation in gymnastics is encouraging because of its benefits in health for the ones who participate. However, the increased involvement in an early age and continued through the growth years increases the concern about the risk and severity and long-term effects of injury to the young gymnast. Indeed, most of them do not pass their life without injury (Caine & Maffulli, 2005). On the other hand, incurring injury in gymnastic is unavoidable. According to the severity, number of training and competition hours and nature of skills in gymnastic, it may be a sport with high injury risk. The incidence rate of 4.8 injuries per 1000 gymnastic

* Corresponding author: Mojtaba Ebrahimi Varkiani. Tel.: +0-912-431-8763
E-mail address: m.ebrahimi@ut.ac.ir

Selection and peer review under the responsibility of Prof. Dr. Kobus Maree, University of Pretoria, South Africa.
doi:10.1016/j.sbspro.2013.06.259

participants per year was reported for the US children aged 6-17 years (Singh, Smith, Fields, & McKenzie, 2008). It was 15.19 and 6.07 injuries per 1000 athlete-exposures in competition and practice respectively in college athletic women. Of the injury type, most of injuries diagnosed in children presented to US emergency departments were strain/sprain (44.5%) and fracture/dislocation (30.4%) (Singh et al., 2008). Concerning the body region injuries, upper extremity (42.3%) was the most frequently injured body region in US children. However, lower extremity (49.1%) was mostly injured in trampoline, tumbling and acrobatic gymnastics (Grapton, Lion, Gauchard, Barrault, & Perrin, 2012). Additionally, a review in pediatrics gymnastic injuries showed that lower extremity incurred injury more in club-level gymnasts (Caine & Maffulli, 2005). Furthermore, it has been observed that foot (21.0%), ankle (19.3%) and knee (14.0%) were the three most common body parts injured in female gymnasts in Club (O'Kane, Levy, Pietila, Caine, & Schiff, 2011). There was no sex differences in Norwegians gymnasts injuries (Lund & Myklebust, 2011). However, a higher injury rate of ACL injuries (incidence rate ratio of 5.67) has been observed in female in comparison to male (Lund & Myklebust, 2011). Of age groups, in a study by O'Kane et al. (2011), children aged 10-12 and 13-17 years incurred injuries 3.6-fold and 3.1-fold greater than children aged 7-9 years old respectively (O'Kane et al., 2011). Although there are some studies about gymnastic injuries, few studies compared gymnastics injuries in various age groups. Children and youth are in high risk of injury in this sport and injuries may affect their performance and growth. Due to the importance of these ages, the present study purposed to compare the injuries in child and youth gymnastic athletes in Iran by the application of the sport medicine federation injury surveillance system data in 2009-2010.

2. Methods

2.1. Participants

A retrospective analysis was done for the data for children and youth gymnastic athletes from the sport medicine federation injury surveillance system of Iran.

2.2. Procedure

The present study was a descriptive-comparative study. The sport medicine federation injury surveillance system is operated to provide sport related injuries incurred by insured athletes participating in various sports from all provinces of Iran. All insured athletes injured should present to the sport medicine federation in order to be referred to the hospital for treatment. Age, gender, body part and body region injuries were investigated during analysis. 2 age groups were in the present study: 7 to 14 years and 15 to 24 years.

2.3. Statistical analysis

In order to compare groups, Mann-Whitney U test with the significance level of (p<0.05) was used. All statistical analysis was done by SPSS software (Version 14).

3. Results

There was a significant difference between children and youth injuries (p=0.001). Boys and girls injuries were significantly different (p=0.034); however, it was not significant between men and woman (p=0.894).