

## Sports injuries among the participants of special foundation training course in BARD, Comilla.

MA Rahim<sup>1</sup>, J Jahangir<sup>2</sup>, ZH Bhuiyan<sup>3</sup>, A Taslim<sup>4</sup>, M Ahmed<sup>5</sup>, MN Uddin<sup>6</sup>

### Abstract

**Background:** Sports/recreational activities are increasingly popular among all age groups, although these activities carry some risk of injury. The present study aimed to identify the incidence and potential risk factors for sports in a training institution at Comilla, Bangladesh. **Method :** This observational study was conducted from 08<sup>th</sup> September to 18<sup>th</sup> October, 2011 in Bangladesh Academy for Rural Development (BARD) among the 44 participants (all of them are government doctor) of special foundation course and data were collected by using a structured questionnaire about the sociodemographic characteristics, self-reported height, weight, sports injury, awareness on the sports injury and relevant information. **Result :** In this study mean age of the male (79.54%) were 35.91 years and female (20.44%) were 35.88 years. The overall incidence rate of sports injury is 59.1 % (N = 44). Male (22 out of 35) were the predominant sufferer (62.85% of male) of sports injury where as 44.44% of female (4 out of 9) were injured. For male football is the most vulnerable game for sports injury which causes 14 injury (32%) followed by Volleyball (7) and badminton (6). For female physical training appeared the 1<sup>st</sup> position (2) followed by Badminton (1) and table tennis (1). Knee (25%) is the most vulnerable area of injury in our study followed by ankle, foot and toes area (22.27%), hand and finger (11.14%), back (9.09%) and elbow (6.82%). Though all participants were doctor only 18.19 % used to wear protective Elastic Garments like knee cap and ankle during the sports activity to prevent sports injury and 34% of them were not informed about the beneficial effect of warming up or stretching activity before participation in sports. **Conclusion :** Sports are an important source of injury, morbidity and relevant consequences for the participants of foundation training of BARD. Results of this study indicate the need for further research, especially population based efforts, to identify specific risk factors that provide a basis for development of strategies to reduce this injury burden on occasional sports participants like trainees of BARD and relevant.

**Key words:** sports injury, foundation training etc.

*J Cox Med coll 2018;5(2): 28-31*

### Introduction

Foundation training courses are human resource development courses designated for the Bangladesh Civil Service (BCS) officers. The trainees are required to take part in the physical exercise in the morning and sports at evening everyday compulsorily as a part of the training. This is intended to build a sound body essential for government officials to withstand workloads and to cope with strenuous job. This study conducted in a

renowned institution named Bangladesh Academy for Rural Development (BARD) which not only involved in research in rural development and allied fields but also provides training of Government officials and others concerned with Rural Development. The Academy has an experienced physical instructor to conduct the sports and physical activity session.

An injury was defined as any event resulting in one or more of the following: restriction of normal activities for four hours or more; loss of consciousness, loss of awareness, or amnesia for any length of time; use of professional health care. Sports/recreational injuries were defined as those resulting from organized, recreational, and general play activities<sup>1</sup>.

Sports/recreational activities are increasingly popular among all age groups, although these activities carry some risk of injury. Some study done in USA in 1997 revealed that 62% of high school students reported participating in one or more sports teams<sup>2</sup>, and 64% of adults participated in leisure time physical activity<sup>3,4</sup>. Internationally, studies have shown sports/recreational injuries in various settings to be an important source of injury and morbidity<sup>5-11</sup>.

Though injuries are a common occurrence in professional sports<sup>12</sup> but it is not uncommon in

1. Dr. Mohammad Abdur Rahim  
Assistant Professor, (Physical Medicine & Rehabilitation)  
Cox's Bazar Medical College
2. Dr. Javed Jahangir  
Assistant Professor, (Orthopedic surgery)  
Chittagong Medical College.
3. Dr. Zohirul Hoque Bhuiyan,  
Associate Professor, (Physical Medicine & Rehabilitation)  
Cox's Bazar Medical College
4. Dr. Abu Taslim  
Associate Professor, (Physical Medicine & Rehabilitation)  
BGC Trust Medical College, Chittagong.
5. Dr. Monzur Ahmed  
Assistant Professor, (Physical Medicine & Rehabilitation)  
Shaheed Suhrawardy Medical College, Dhaka.
6. Dr. Mohammad Nazim Uddin  
Consultant, (Physical Medicine & Rehabilitation)  
CSCR, Chittagong.

### Correspondence:

Dr. Mohammad Abdur Rahim  
e-mail : rahim\_cmc@yahoo.co.uk

occasional and novice sports participants<sup>13</sup> like the trainees of BARD. So it was a realization that, to find out the common sports injury among the participants of special foundation course in BARD might play somehow a role in improving the awareness about sports injury and its prevention.

To date, research on sports/recreational injuries have been predominantly descriptive and often limited to specific types of sports. Moreover, few efforts have focused on training institution and rural populations<sup>14</sup>. The goal of the present study is to identify the incidence and potential risk factors for sports in a training institution.

#### Objectives:

- To identify the types of sports injury occurs among the participants
- To assess the rate of reported injuries.
- To investigate whether injuries are linked with the practice of different types of sports.
- To find out the risk factors of that injury.

#### Methods

This observational study was conducted from 08<sup>th</sup> September to 18<sup>th</sup> October, 2011 in Bangladesh Academy for Rural Development (BARD) among the participants of 85<sup>th</sup> special foundation course in BARD, Comilla, Bangladesh. Ethical clearance for the study was obtained from the BARD authority. After introductory conversation and obtaining consent from respondents the relevant data were collected by using a self-administered, structured questionnaire. Information was collected on the sociodemographic characteristics, self-reported height, weight, sports injury, awareness on the sports injury and relevant information. During that period there were two trainee batches. One batch (85<sup>th</sup>) batch was selected for the study as the batch has more similar characteristics. All trainees of this batch are Government doctor. Out of 49 trainees 44 had completed the questionnaire successfully. After completion of the questionnaire, validation and consistency were checked and edited accordingly then the data were compiled, analyzed, categorized and summarized.

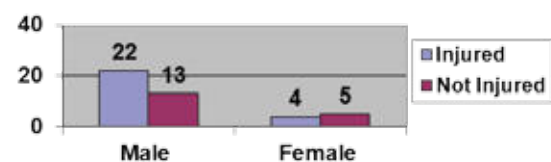
#### Results

##### Demographic Characteristics of the respondents:

**Age and Sex:** In our study population highest proportion of the respondents (51.11%) was within 35 – 39 years . The mean age of the male respondents were 35.91 years and female respondents were 35.88 years. Regarding the sex of the respondents majority (79.54%) were male and rest were female (20.44%).

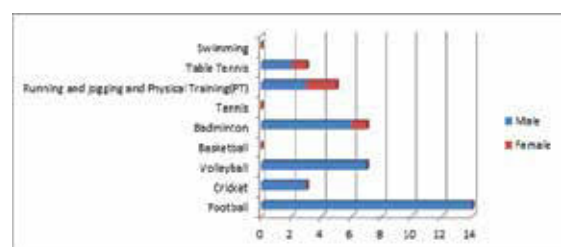
**Weight and height:** Highest number of the respondents 23(51.11%) were within 70-79 kilogram weight category. The mean weight of the male respondents was 72.94 kilogram and female respondents was 63 kilogram. Most of the respondents 22 (48.88%) were within 65 – 69 inch category. The mean height of the male respondents was 66.24 inch and female respondents was 62 inch.

**Presence of sports injury:** The incidence rate of sports injury among the participants is 59.1 %. Male were the predominant sufferer 22 (62.85% of male) of sports injury on the other hand 44.44% of female (4 out of 9) were injured.



**Figure 1: Sports injury among the participants Sports that cause injury (n=44):**

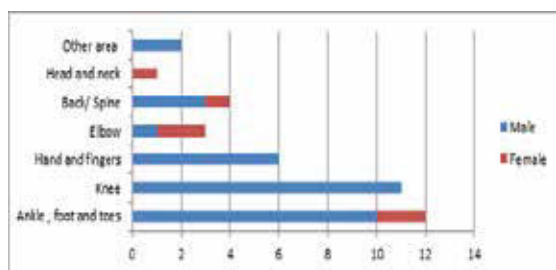
For male football is the most vulnerable game for sports injury which cause 14 injury. Volleyball (7) and badminton (6) got the second and third position respectively. For female physical training appeared the 1<sup>st</sup> position by causing only 2 injury. Badminton and table tennis were holding the second position by causing 1 injury each.



**Figure 2: Number of sports injury in different sports event among the participants**

##### Body area involved in sports injury (n=44):

For male knee is the most vulnerable area for sports injury which involved in 11 injury. Ankle , foot and toes (10) and Hand and fingers (6) got the second and third position respectively. No one injured in head and neck area. The other area of involvement were Back/ spine (3) , elbow (1) , forearm(1) and buttock (1).For female ankle , foot and toes area along with the elbow got the 1<sup>st</sup> position which were involved in only 2 injuries. The other area were back/spine and head & neck which scored 1 each.



**Figure 3 : Body area involved in sports injury among the participants**

### Consciousness about sports injury and its prevention

In this study consciousness about sports injury (question no 1,2), sports related injury prevention (question no 3,4 ) is assessed by some structured questions.

Sl.	Questions		Male	Female
1	Do you think that Morning PT and Evening sports can cause some injury?	Yes	35	09
		No	0	0
2	Do you think that you were conscious about sports injury when you were placed BARD for training?	Yes	20	05
		No	15	04
3	Have you taken any precaution for avoiding sports injury, like wearing Knee cap or ankle?	Yes	07	0
		No	27	09
4	Did you informed that "Warming up" and "Stretching" before starting a sports is necessary for avoiding sports injury?	Yes	23	06
		No	12	03

### Discussion

To our knowledge this is the first study in Bangladesh to describe the sports related injury in special foundation course for BCS cadre. The other study done to describe sports injury involved armed force personals or professional players. So the injury patterns of those study may not match with this study as the population of this study is amateur sports participants and it is expected that the amateur will more susceptible to sports injury if they participate in same type and same duration of sports. Unfortunately this study design cannot correlates sports duration with sports injury. In this study incidence rate of sports injury is 59.1 %. This data is nearly similar with the study of NH Khan et al<sup>15</sup> done on Military personnel of Bangladesh 68.4%. But it is more than the double of incidence rate (28%) that involved armed personals of Denmark in the study of Rosendal L, et al.<sup>16</sup>. The incidence rate was 23% in a study which involved sports injury in primary healthcare setting of Netherland.<sup>17</sup> This variation is may be due to culture and geographical area, nature of the sports, physic of the participants etc.

Another cause of increase in incidence may be the age of the participants. In the study of Frank Baarveld et al<sup>17</sup> the low incidence rate (23%) is for the mean age of 30 years. In our study, all of the participants are doctor who are usually not involved in physical activity and mean age was 36 years.

As in most other studies<sup>16,17,18,19</sup> our study also shows more injuries in male. This is because, males are more actively participated in sports and they played more injury prone sports (like football) than females.

The injury prone sports in BARD are namely Football ( 32% ) , Volleyball ( 16%) and Badminton ( 13.6%) and Physical Training ( 11.3%) . As different sports are popular in different segments of world so the articles have vary in the injury prone sports order. In their study Frank Baarveld et al<sup>17</sup> found soccer (Football) (26.2%), Running/ Jogging (8.6%), Volleyball 6.3% and speed skating accounts for 6% of sports injury. In another study of de Loes M et al<sup>19</sup> found Ice hockey and handball were then found to have the highest risk followed by soccer. No one injured in basketball, tennis and swimming which are obviously less popular game in BARD. Surprisingly Cricket positioned 4<sup>th</sup> in conjunction with Physical training. Out of these two game, players involved in Cricket only for 1 day and Physical training for almost every working day. It may because of hard and wet playground (Basketball ground) used for cricket and physical training in non exhaustive.

Knee ( 25%) is the most vulnerable area of injury in our study followed by ankle, foot and toes area (22.27%) , hand and finger (11.14%) , back (9.09%) and elbow (6.82%) . In their study Frank Baarveld et al<sup>17</sup> found most injury prone area are knee (16.3%), Ankle (8.3%), Foot and Toe (6.9%), Shoulder (5.75%). Other study<sup>20</sup> also shows that knee injury is the most predominating injury.

The athletes usually perform warming up and stretching activities to prepare for more strenuous activity before participating sports. These preliminary activities are used to enhance physical performance and to prevent sports-related injuries<sup>21</sup>. In this study we try to estimate the consciousness about sport injury and preventive measure taken by the participants. As the all participants are doctor, it is expected that all of them are conscious about sport injury but surprisingly 81.81% did not wear any protective Elastic Garments like knee cap and ankle during the sports activity to prevent sports injury. 34% of them were not informed about the beneficial effect of warming up or stretching activity before participation in sports.

### Conclusion:

Sports are an important source of injury, morbidity and relevant consequences for the participants of foundation training of BARD. Male participants are vulnerable to sports related injury especially who did not take preventive measures like wearing knee cap or warming up prior to the sports. This

small survey which involve only a batch may not reflect the whole scenario. So we recommend further multicenter large population based study.

## References

1. Kurszewski LS, Gerberich SG, Serfass RC, Ryan AD, et al. Sports and recreational injuries: regional rural injury study- II: impact on agricultural households and operations. *Br J Sports Med* 2006;40:527–535. doi: 10.1136/bjism.2005.023903
2. Pate RR, Stewart GT, Levin S, et al. Sports participation and health-related behaviors among US youth. *Arch Pediatr Adolesc Med* 2000;154:904–11.
3. Schoenborn CA, Adams PF, Barnes PM, et al. Health behaviors of adults: United States, 1999–2001. National Center for Health Statistics. *Vital Health Stat* 10 2004;219:39–54.
4. Burt CW, Overpeck MD. Emergency visits for sports-related injuries. *Ann Emerg Med* 2001;37:301–8.
5. Sandelin J, Santavirta S, Lattila R, et al. Sports injuries in a large urban population: occurrence and epidemiological aspects. *Int J Sports Med* 1988;9:61–6.
6. Backx FJG, Erich WBM, Kemper ABA, et al. Sports injuries in school-ages children. An epidemiologic study. *Am J Sports Med* 1989;17:234–40.
7. Backx FJG, Beijer HJM, Bol E, et al. Injuries in high-risk persons and high-risk sports. A longitudinal study of 1818 school children. *Am J Sports Med* 1991;19:124–30.
8. Mummery WK, Spence JC, Vincenten JA, et al. A descriptive epidemiology of sport and recreation injuries in a population-based sample: results from the Alberta Sport and Recreation Injury Survey (ASRIS). *Can J Public Health* 1998;89:53–6.
9. Dekker R, Kingma J, Groothoff JW, et al. Measurement of severity of sports injuries: an epidemiological study. *Clin Rehabil* 2000;14:651–6.
10. Grimmer KA, Jones D, Williams J. Prevalence of adolescent injury from recreational exercise: an Australian perspective. *J Adolesc Health* 2000;27:266–72.
11. Tursz A, Crost M. Sports-related injuries in children. A study of their characteristics, frequency, and severity, with comparison to other types of accidental injuries. *Am J Sports Med* 1986;14:294–9.
12. Sports injury [Internet]. Wikipaedia. Wikipedia, The Free Encyclopedia; 2016 [cited 2016 Sep15]. Available from : [https://en.wikipedia.org/wiki/sports\\_injury](https://en.wikipedia.org/wiki/sports_injury)
13. Buist I, Bredeweg SW, Lemmink KA, van Mechelen W, Diercks RL. Predictors of running-related injuries in novice runners enrolled in a systematic training program: a prospective cohort study. *Am J Sports Med*. 2010;38(2):273-280.
14. Finch C, Mahoney M, Townsend M, et al. Rural sports and recreational injuries in Australia: what do we know? *Aust J Rural Health* 2003;11:151–8.
15. Khan NH, Ahmad M, Rahman FN, Ali M, Rahman MM, Pattern of injuries amongst armed forces personnel received during military activities. *JAFMC Bangladesh*. (December) 2013; 9(2): 43-48
16. Rosendal L, Langberg H, Skov-Jensen A, Kjaer M: Incidence of injury and physical performance adaptations during military training. *Clin J Sport Med*. 2003, 13: 157-163. 10.1097/00042752-200305000-00006.
17. Baarveld F, Visser CA, Kollen BJ, Backx FJ. Sports-related injuries in primary health care. *Fam Pract* 2011; 28: 29-33
18. DeHaven KE, Lintner DM. Athletic injuries: comparison by age, sport, and gender. *Am J Sports Med* 1986; 14 (3): 218–24
19. de Loes M, Goldie I. Incidence rate of injuries during sport activity and physical exercise in a rural Swedish municipality: incidence rates in 17 sports. *Int J Sports Med* 1988; 9 (6):461–7
20. Rosa BB, Asperti AM, Helito CP et al (2014) Epidemiology of sports injuries on collegiate athletes at a single center. *Acta Ortop Bras* 22:321–324
21. Shellock F. G., and Prentice W. E. Warming-up and stretching for improved physical performance and prevention of sportsrelated injuries. *Sports Med*. 2:267–278, 1985.