

Patterns of Sports Injuries & Associated Factors among the Volleyball Players of Selected Sports Institutes in Dhaka city

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Abstract:

Volleyball is an increasingly popular team sport. Sports injuries are the main fear and threats to the all players all over the world. The objective of this study was to find out the pattern of sports injuries & associated factors among the volleyball players of selected sports institute in the Dhaka city. Quantitative approach & cross sectional study was done as a study design. Only male respondent with the age range from 15 to 35 years of age with the sample size of 62 was done as a study population. Study was conducted at Dhaka city. Convenience sampling technique was done for sample selection as study subject. A pre tested structured questionnaire, digital weight machine & measuring tape was used as data collection instrument. Pen, pencil & paper were used as a data collection material. After data collection, data was stored & quality control check was performed. Statistical package of Social Science (SPSS), version 20 was used for data analysis. In terms of site of injury, Study revealed that knee, ankle & shoulder joint injury were 27.4%, 22.6% & 16.1% respectively. 54% of the injury was occurred which had no previous injury whereas 46% of the injury occurred which had previous injury. In terms of difficulty participation in normal training & competition, 56% of the respondent did full participation but with injury, 37% of the respondent did reduce participation & 7% of the respondent did not participation in normal training & competition due to these injuries. 66.1% of the respondent was sudden onset of injury whereas 32.3% of the respondent was gradual onset respectively. In terms of type of injury, Ligament sprain, muscle strain, tendinopathy, fracture & dislocation were 46.8%, 29%, 16.1%, 4.8% & 3.2% injury among volleyball players respectively. Participants who did not have an idea about injury prevention had suffered severe type of injury (n=56, 90.3%) than those who had idea about injury prevention & was a statistically significant ($p=0.007 < 0.05$). 69.4% of the respondent did not get physiotherapy treatment facilities whereas 30.6 % of the respondent did get physiotherapy treatment facilities after injury respectively.

Key words: Sports injuries, Volleyball players, associated factors

Introduction:

Volleyball is an increasingly popular team sport. As with any competitive sport, there is always an inherent risk of injury. The participation of volleyball is becoming increasingly common and this increased involvement raises concerns about the risk of installation of sports injuries. Volleyball is a game that can be played by all ages and both sexes indoors and outdoors. It can be highly competitive, requiring a high level fitness, agility and co-ordination, or it can be a relaxing and highly enjoyable recreation. The players of the game require competitively concentration, quick thinking and a great deal of movement. In addition the speed of the game requires the players to take quick decisions because of the quick changing situations of attack and defense. Volleyball requires a variety of physical attributes and specific playing skills therefore participants need to train and prepare to meet at least a minimum set of physical, physiological and psychological requirements to cope with the demands of the game and to reduce the risk the injuries. Volleyball playing largely involves, jumping, stretching, and twisting. Diving, spiking and turning movements that place the players to greater risk of injuries (Jadhav et al., 2010)

Sports injury is a term as loss or abnormality of bodily structure or functioning resulting from an isolated exposure to physical energy during sports training or competition that following examination is diagnosed by a clinical professional as a medically recognized injury (Timpka, 2014). Sports injuries are common due to contact with player, ground, objects, and other reasons such as pressure, overuse, and falls. Weakness is also a common cause of injuries. (Abdelnour, 2008). Sports injuries may include muscle strains, contusions, tendinopathy, fasciitis, bursitis, muscle and tendon tears and ruptures, joint sprains, ligament tears, joint dislocation, bone fractures, cartilaginous damage, and bone stress fractures (Edward, 2012). Anatomical sites, types and severity of the injury is known as Pattern of sports injury (A Hamid et al, 2016). These injuries are the main fear and threats to the all athletes all over the world. Sports injuries causes increase their suffering like physical, psychological & economical burden (Masouleh et al., 2017). The objectives of this study is to find out the pattern of sports injuries & associated factors among the volleyball athletes of selected sports institute

Methodology:

It was a descriptive type of cross sectional study was conducted to find out the pattern of sports injuries & associated factors among the volleyball athletes of selected sport institutes in the Dhaka city with a sample size of 62. Only male respondent with the age range from 15 to 35 years of age was done as a study population. Study was conducted at Bangladesh Health Profession Institute (BHPI), Centre for the rehabilitation of the paralyzed (CRP), Dhaka but data was collected from Bangladesh Volleyball Federation, Army Sports Complex & Bangladesh krira Shikha Protistan (BKSP), Dhaka. This study was an academic part of the Masters course that's why it had to finish according to academic calendar. However it was started on August 2017 and it was finished on April 2018. Convenience sampling technique was done for sample selection as study subject. A pre tested structured questionnaire, digital weight machine & measuring tape was used as data collection instrument. Pen, pencil & paper were used as a data collection material. The collecting data were editing & analyzed by using statistical package of social science (SPSS) software, version 20. After data collection, data was stored & quality control checked for their completeness, correctness & internal consistency in order to exclude missing or inconsistent data. Corrected data were entered into the computer. Data analysis was done according to the objectives of the study. P-value more than 0.05 was considered insignificant

Results:

Table-1 showed that the minimum age of the participants was 15 whilst the maximum age was 34 years. The mean \pm SD (Standard Deviation) age of our participant was 22.94 ± 4.75 with a range of 19. All the participants were male in this study. Age group for less than 20 years, 21-30 years & more than 30 years were 29.0%, 64.5% & 6.5% of the respondent among injury players respectively. Year of schooling for less than 10 years, 10-15 years & more than 15 years were 25.8%, 72.6% & 1.6% of the respondent among injury players respectively.

Characteristics	Number (n)	Percent (%)
Age group (Years)		
< 20	18	29
21-30	40	64.5
>30	4	6.5
Years of schooling		
<10 years	16	25.8
10- 15 years	45	72.6
> 15 years	1	1.6

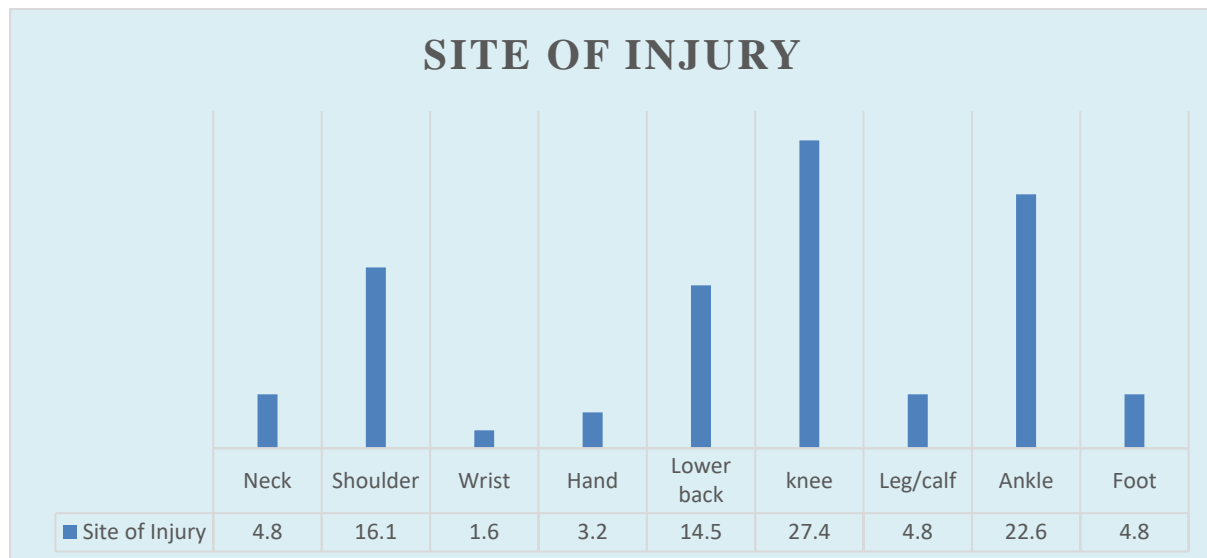


Figure 1: Distribution of respondents according to site of injury (%)

Figure-1 showed that the most common site of the injury among volleyball athletes were knee, ankle & shoulder joint. It was revealed that knee, ankle, shoulder, lower back, neck, leg/calf, foot, hand & wrist injury were 27.4%, 22.6%, 16.1% , 14.5%,, 4.8%, 4.8%, 4.8%, 3.2% &1.6% respectively.

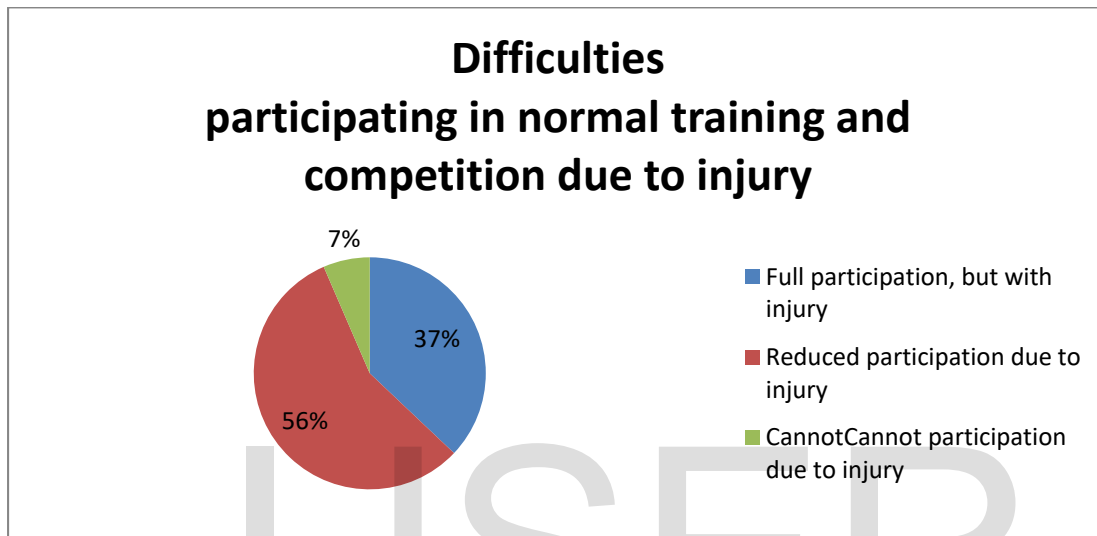


Figure 2: Distribution of respondents according to their difficulties participating in normal training and competition due to injury (%)

Finding of this study showed that 56% of the respondent did full participation but with injury, 37% of the respondent did reduce participation & 7% of the respondent did not participation in normal training & competition due to these injuries (Figure 2)

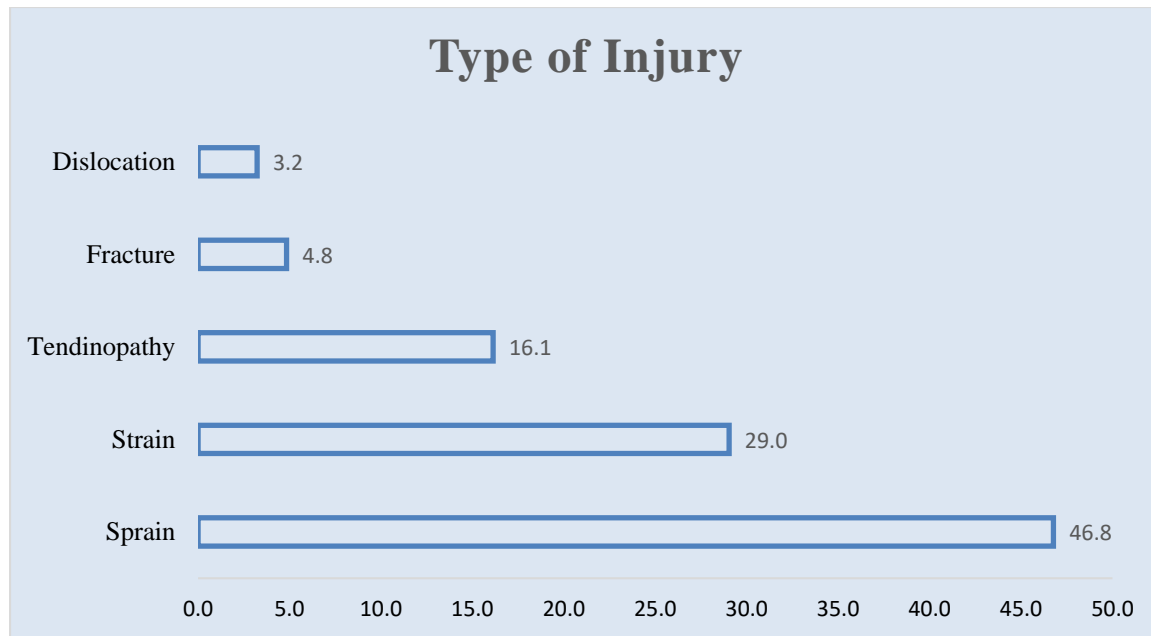


Figure 3: Distribution of the respondents according to their type of injury (%)

Figure-3 revealed that the majority type of sports injury was sprain among volleyball athletes. Ligament sprain, muscle strain, tendinopathy, fracture & dislocation were 46.8%, 29%, 16.1%, 4.8% & 3.2% injury respectively.

Table-2 showed that sports experienced for 5 years or less than 5 years, 6-10 years & more than 10 years were 53.2%, 33.9% & 12.9% of the respondent among injured volleyball players respectively. 79.0% of the respondent among injured volleyball players did not get self massage during, before & after sports whereas 21% of the respondent did get self massage during, before & after sports respectively. 69.4% of the respondent among injured volleyball players did not get physiotherapy treatment facilities whereas 30.6 % of the respondent did get physiotherapy treatment facilities after injury respectively. 87.1% of the respondent among injured volleyball players was played at outdoor play ground whereas 12.9% of the respondent was played at indoor play ground respectively. 58.1% of the respondent among injured volleyball players was occurred during morning session whereas 41.9% of the respondent was occurred during afternoon session respectively.

Characteristics	Number (n)	Percent (%)
Sports Experience		
≤ 5 years	33	53.2
6-10 years	21	33.9
> 10 years	8	12.9
Self-massage during, before and after sports		
Yes	13	21
No	49	79
Took Physiotherapy after injury		
Yes	19	30.6
No	43	69.4
Type of play ground		
Indoor	8	12.9
Outdoor	54	87.1
Type of play ground		
Indoor	8	12.9
Outdoor	54	87.1
Period of injury		
Morning	36	58.1
Afternoon	26	41.9

Participants who did not have an idea about injury prevention had suffered severe type of injury (n=56, 90.3%) than those who had idea about injury prevention; There was a significant relationship between Severity of injury and idea about injury prevention (p=0.007, <0 .05) (Table 3)

Idea about injury prevention	Severity of injury			
	Mild	Moderate	Severe	Total
Yes	6	0	0	6
	24.0%	0.0%	0.0%	9.7%
No	19	15	22	56
	76.0%	100.0%	100.0%	90.3%
P value=0.007 (<0.05)				

Satisfaction of diet has significant association with severity of injury ($p=0.029<0.05$). Participants with very satisfied diet had more mild injury ($n=16, 64%$) whilst participants with somewhat satisfied diet had more severe injury ($n=16, 72.7%$) than their comparison group (Table 4).

Satisfaction of diet	Severity of injury			
	Mild	Moderate	Severe	Total
Very Satisfied	16	9	6	31
	64.0%	60.0%	27.3%	50.0%
Somewhat Satisfied	9	6	16	31
	36.0%	40.0%	72.7%	50.0%
p value = 0.029 (<0.05)				

Discussion:

This study reveals that Knee (27.4%), ankle (22.6%), Shoulder (16.1%) & lower back (14.5%) were the most common site of injury. One study showed that the Knee & ankle was the most common injured body site in Volleyball players (Fong, D et al., 2007). Another study showed that among the injured players, ankle and knee injuries showed the highest injury prevalence with 25.5% for each followed by 19.6% for shoulder injuries.(Abdelnour,2008). Another study showed that among the volleyball players, increases the risk of ankle, calf and knee injuries (Deda & Kalaja, 2015). The findings support the statement with the other study results in volleyball players. Majority of the participants reduced their training volume to a minor extent (53.2%) due to the injury. Most of the participants did not have any ideas about injury prevention (90.3%) while very few of them had ideas about prevention of injuries (9.7%).

Most common type of injury among participants was sprain (46.8%), strain (29%) and tendinopathy (16.1%). Only few participants had fracture and dislocation. There was significant relationship between site of injury and age-group. One study showed that the most common type of injuries are sprains and strain. It was establishing that the most common injury is in Muscle strain and ligament sprain (36%) (Gamez et al., 2006). The findings support the statement with the other study results in volleyball players. Maximum site of injury (64.5%) occurred at age

group 20 to 30 years where knee & ankle injury is the most common site. One study showed that the across all ages, ankle was the most commonly injured body part (25.9%) followed by the knee (15.2%), fingers/thumb (10.7%) and lower back (8.9%) (Bere et al., 2015).

This study revealed that type of injury have affected performance to a minor extent for most of the participants (61.3%) and most common injury were sprain and strain for them. Most of the participants have reduced their participation in normal training due to their injury, among them (58.6%) have had sprain and (50.0%) had strain. Some participants with sprain had full participation in normal training. Type of injury like sprain, strain, tendinopathy, fracture & dislocation was most common among participants having less than 5 years of sports experience (53.2%) than more than 5 years. Sprain and strain were the most common type of injury among participants having less than 5 years of sports experience, although it was not statistically significant. One study showed that knee injuries occurred in subjects with a high degree of fitness and more experience (Moeller & Lamb, 1997)

This study showed that Majority of the participant had sudden onset of pain (n=41, 66.1%). Much more participant of them had gradual onset of pain (n=20, 32.3%). One study showed that Half of the injuries (50%), which occurred gradually onset (Abdelnour, 2008). Another study showed that 41% of all injuries had a gradual onset (Augustsson, 2009). Participants who had sleeping duration of more than 6 hours had suffered from injury (54.8%) more than the others. Knee and ankle injury were the most common in this group and there was a significant relationship between Sleeping hours with site of injury ($p = <0.001$). Maximum participant affected their performance to a minor extent (61.3%) and most of them have suffered from knee, ankle and lower back injuries. Site of injury was significantly associated with participant's injury affected performance ($p=0.007$).

Conclusion

A sports injury is the part & parcel of the sports. This injury is the main fear & threat to the players. Findings of this study will helpful to fix the treatment protocol as well as formulating injury prevention specifically designed for them. So, immediate attention should be needed for their preventive, curative & rehabilitative measures.

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