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Study on the risk factors of anterior shoulder dislocation among football players of Dhaka city. A cress sectional survey based study

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Abstract
Background: Anterior dislocation of shoulder joint is an often injury hurt by athletes like football players on account of the accident and strength contact with other players on the ground.
Purpose: The purpose of this study was to investigate the risk factors of anterior shoulder dislocation among football players of Dhaka city.
Methods: A total of 40 football player from different football club team in Dhaka city were investigated by use of self-administered questionnaires.
Result: A descriptive epidemiological study was performed prospectively by the different playing seasons of (2010–2021) and showed that the average age of player were 24 to 27 years and male player (80%), higher secondary passed (42.5%), unmarried (60%), recreational player (37.5%) were more. Most of the player height were (5.6 to 5.8 inch), weight were (62 to 67 kg) and present history of trauma (65%). Most of the injury (35%) occurred during dangerous tackles & (47.5%) had previous history of anterior shoulder dislocation. (95%) of player maintained warm-up training before play and (70%) did not use any protective appliance, more injury occurred within midfielder (35%) and left shoulder joint (42.5%), and most were didn't maintain exercise in regularly (72.5%) and felt sever types of pain (45%), more of the dislocation (62.5%) occurred by fall during play. Self-correction technique were applied in (30%) of the player and (47.5%) visited allopathic doctor to solve injury. (57.5%) of the player don't know about shoulder dislocation. Study also showed there was statistically significant association present between traumas with self-treatment ($p \leq 0.021$) and self-treatment with preventive measure ($p \leq 0.005$) and visit doctor with knowledge about shoulder dislocation ($p \leq 0.044$).
Conclusion: Football players with a record of shoulder dislocation are not playing at full dimension and also have a significant rate of reinjure as well as a high risk of dislocating the other shoulder. The hazard of injury in enjoyment football players is comparatively high causing significant labor loss. The results suggest that prevention programs should consider to prevent anterior shoulder dislocation.

Keywords: football player, shoulder dislocation, football team, injury, risk factor

Introduction

A dislocated shoulder is an injury in which head of the humerus pops out of the cup shaped glinoid cavity of shoulder blade. The shoulder joint is the very flexible and mobile joint in our body, which makes it susceptible to dislocation [1]. The occurrence of repeated injury due to shoulder joint instability & the major risk factors for primary anterior shoulder dislocation in youth football players have been unclear [2]. Musculoskeletal injuries scope from insignificant sprains and strains to occupation ending tears, burst and fractures. In football, possible mechanisms of injury include player to player contact, player to surface contact, repetitive stress injuries and noncontact ligament tears & muscle strains [3]. Extrinsic risk factors of recurrent shoulder instability include occupations which entail using the upper extremity high up chest height, knock sport either playing surface. Intrinsic risk factors include hypermobility and age. Different innate risk factors may be the outcome of pathological destruction occurred during shoulder dislocation [4]. This condition is very painful & it may be occur in any direction but most common is anterior direction. Shoulder dislocation is not to be treated by the medical profession only but also self-treatment is very beneficial during plying. Shoulder joints are very flexible for this reason dislocation is highly susceptible [5]. The risk of shoulder injuries can vary among the different overhead sports like athletes player in sports may be excessive risk of traumatic shoulder injuries. A common feature of overhead sports is the repetitive use of the shoulder with the hand above

the head [6] approximately fifty percent (50%) of all major joint dislocations affect the shoulder, most habitually (95 to 97%) resulting in an anterior shoulder dislocation. Overprice occurrence of dislocations have been indicate to strike athletes and may lead to reduce the level of sport activities. Primary treatment for shoulder dislocations are conservative treatment especially immobilization of joint & physical therapy showed beneficial results, much as high recurrence rates have been reported. Moreover, recurrence rates for CA tend to be slightly higher [7].This study will design to investigate the risk factors of anterior shoulder dislocation and identify the impact of demographic, occupational, psychological and social factors. The study may able to identify the cause that can control or minimize the anterior shoulder dislocation. This research will be useful to find out the good postural habit to decrease this disorder and increase awareness among those patients.

Methodology

A cross sectional study on the risk factors of anterior shoulder dislocation among the football players of different football club in Dhaka city. Non randomized purposive sampling technique was applied to collect the data in 2 years of time & Slovin sample size formula were used and 40 player were selected based on the inclusion & exclusion criteria. In inclusion criteria who had history of anterior shoulder dislocation. Pretested, modified, semi-structured questionnaire were used to collect the data. Data was analyzed by statistical software Microsoft Excel & SPSS version 25.

Data Analysis and Interpretation

The questionnaires collected were concealed to exclude any incomplete participant that fell under the exclusion criteria as well as participants who did not fulfill the inclusion criteria. Data entry was carried out by Microsoft Excel before analyzed using SPSS software.

Table 1: Distribution of respondents by causes of injury (n=40)

Cause	Frequency	Percentage
Landing on uneven surface	11	27.5%
Dangerous tackles	14	35%
Kicking the ball	11	27.5%
Twisting of the shoulder	4	10%
Total	40	100
Mean ± SD	2.200±0.966	

The table revealed that the mean of the cause of injury were 2.200±0.966 and 27.5% injury were cause by landing on uneven surface, 35% by dangerous tackles, 27.5% by kicking the ball and 10% by twisting of the shoulder joint.

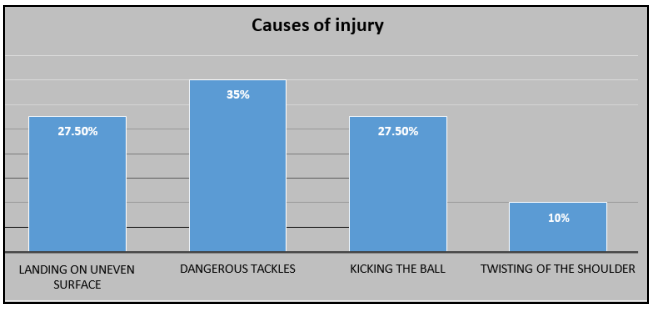

Fig 1

Table 2: Distribution of respondents by use of protective appliance (n=40)

Protective Appliance	Frequency	Percentage
Yes	12	30%
No	28	70%
Total	40	100
Mean ± SD	1.700 ±0.464	

Table-2 revealed that the mean use of protective appliance were 1.700 ±0.464 & 30% were used protective appliance, 70% were not.

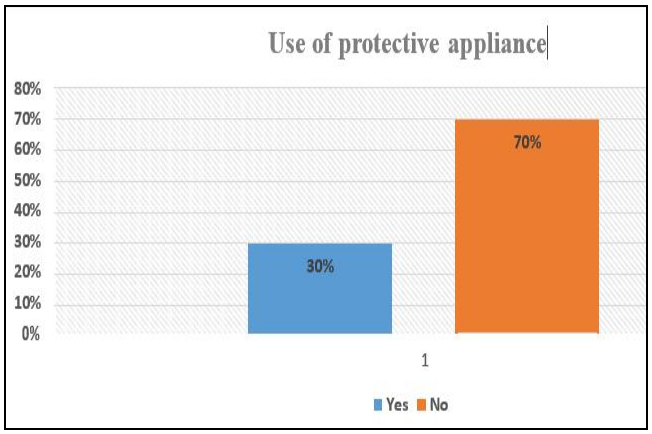

Fig 2

Table 3: Distribution of the respondents by play role in the field (n=40)

Play Role in the field	Frequency	Percentage
Goalkeeper	6	15%
Defender	12	30%
Midfielder	14	35%
Attacker	8	20%
Total	40	100
Mean ± SD	2.600±0.981	

Table-3 revealed that the mean of play role were 2.600±0.981 & goalkeeper were 15%, defender were 30%, midfielder were 35% and attacker were 20%.

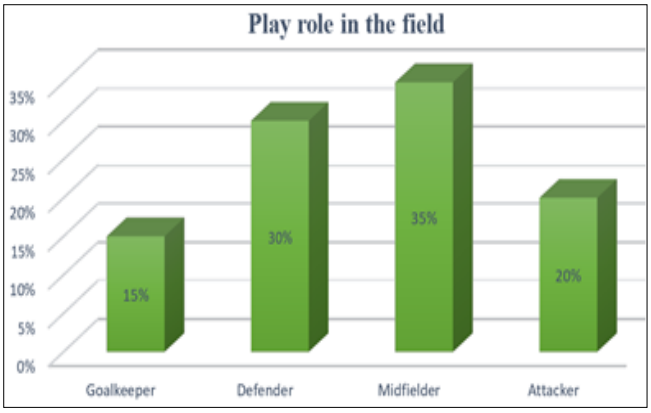

Fig 3

Table 4: Distribution of the respondents by severity of pain (n=40)

Severity of pain	Frequency	Percentage
Mild	15	37.5%
Moderate	7	17.5 %
Sever	18	45%
Total	40	100
Mean ± SD	1.800 ± 0.723	

Table-4 revealed that the mean severity pain were 1.800 ± 0.723 & 37.5% were felt mild pain, 17.5% were moderate pain and 45% were felt pain in sever.

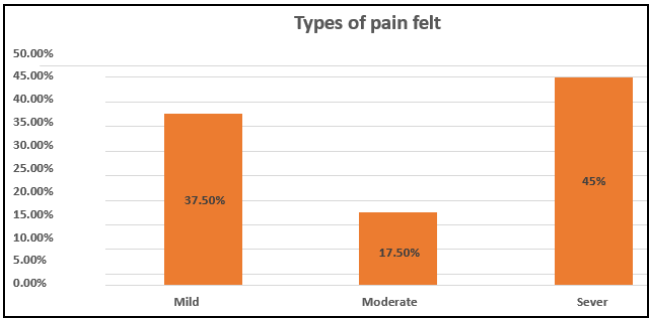

Fig 4

Table 5: Distribution and association of respondents between trauma and rehabilitation program.

Trauma	Rehabilitation program		Total	P value
	Yes	No		
Yes	8	18	26	0.021
No	4	10	14	
Total	12	28	40	

P value obtained person chi-square (x2) test.

The table 5 manifested that P = 0.021 and this number is lower than 0.05 so it also revealed that there was statistically significant relation present between trauma and rehabilitation program.

Table 6: Distribution and association of respondents between self-treatment and preventive strategy.

Self-treatment	Preventive strategy		Total	P value
	Yes	No		
Yes	5	7	12	0.005
No	12	16	28	
Total	17	23	40	

P value obtained person chi-square (x2) test.

The table 6 manifested that P = 0.005 and this number is lower than 0.05 so it also revealed that there was statistically significant relation present between self-treatment and preventive strategy.

Table 7: Distribution and association of respondents between Doctor Visit and knowledge about shoulder dislocation.

Doctor visit	Knowledge shoulder dislocation		Total	P value
	Yes	No		
Yes	12	17	29	0.044
No	5	6	11	
Total	17	23	40	

P value obtained person chi-square (x2) test.

The table 7 manifested that P = 0.044 and this number is lower than 0.05 so it also revealed that there was statistically significant relation present between visit of doctor and knowledge about shoulder dislocation.

Discussion

Anterior dislocation is the most common shoulder dislocations, accounting for up to 97% of all. The main complication of anterior shoulder dislocation is its recurrence [8]. The study found that the mean age of the respondents was 25.97 ± 3.206 and years with a range from 20 to 35 years & found that 24-27 age groups were more this near to similar study found by others [9]. The mean gender of the respondents was 1.200± 0.405 with male 80% and female 20 % this are similar to another study [10] and the mean educational status of the respondents was 2.575 ± 0.930. Within the player 15% were graduate, 42.5% were higher secondary & 27.5% were secondary & 15% were primary educated. The mean marital status of the respondents was 1.425±0.594 with 60% were married, 37.5% were unmarried & 2.5% of the player were divorced. The mean occupation of the respondents was 2.75±1.171. It was found that 20%, 22.5%, 20%, 37.5% of the player belonged to recreational, business, student, others occupation. The mean height of the respondents was 3.00±1.062. It was found that 12.5%,12.5%, 42.5%, 27.5% & 5% of the respondents belonged to (4'5" to 5'2"), (5'3" to 5'5"), (5'6" to 5'8")& (5'9" to 5'11"). The mean weight of the respondents was 63.57±5.939. It was found that 5%, 30%, 35% & 30% of the respondents belonged to (48-54 kg), (55-61 kg), (62-67 kg) & (68-73 kg). The mean of any history of trauma of the respondents were 1.350 ±0.48. Within the player 65% were history of trauma and 35% were no. History of trauma group were more felt this injury [11]. The mean of direct cause of injury of the respondents were 2.200±0.966. It was found that 27.5%, 35%, 27.5% & 10% of the respondents belonged to Landing on uneven surface, Dangerous tackles, kicking the ball & Twisting of the shoulder. Dangerous tackles group were more effected by ASD [12]. The mean of warm-up of the respondents was 1.050 ±0.2207. It was found that 95% of the player did warm up exercise regularly & 5% were no. Here the warm up help to prevent injury [13]. The mean use of protective appliance of the respondents were 1.700 ±0.464. It was found that 30% used protective appliance and 70% were not. The mean play role of the respondents were 2.600±0.981. It was found that 15%, 30%, 35% & 20% of the respondents belonged to Goalkeeper, Defender, Mid fielder & Attacker. The mean of severity of pain felt of the respondents was 1.800±0.723. It was found that 37.5% were felt mild types of pain & 45% were felt moderate types of pain & 17.5% were felt pain severe types. Sever types of pain felt were more [14]. The mean of self-treatment technique of the respondents was 1.575 ±0.500. It was found that 30% were used self-technique & 70% were not. Self-treatment especially counter traction taken group were more easily overcome this injury [15]. The mean knowledge about shoulder dislocation of the respondents were 1.575±0.500. It was found that 42.5% were know & 57.5% were did not know about shoulder dislocation. The mean knowledge of any preventive strategy of the respondents was 1.575±0.500. It was found that 42.5% were taken preventive

strategy & 57.5% were not. Study also found statistically significant association found between traumatic history with self-treatment (where p= 0.021) and traumatic history and rehabilitation program (where p= 0.001) and pain worsen during shoulder movement and preventive strategy (where p= 0.044) and self-treatment and preventive strategy (where p= 0.005) and visit of doctor and knowledge about shoulder dislocation (where p= 0.043)

Conclusion

In conclusion, this study demonstrated that the principle cause of injury is landing on uneven surface, Dangerous tackles, kicking the ball are major contributors to anterior shoulder dislocation. The study revealed that dominant legs are affected & it can be highly associated factor in this condition. Improper warm up exercise and unwilling to use protective appliance can be a concerted factor in this condition. In addition, playing role is important factor in anterior shoulder dislocation as study shows that maximum injuries player midfielder & defender. In this study, there is a clear evidence of recurrence in anterior shoulder dislocation.

Recommendation

Based on study finding, the following recommendation are made with a view to prevent & minimize the occurrence of anterior shoulder dislocation.

Recommendation for program implication:

1. Provide knowledge about sports injury & injury prevention.
2. Encourage to warm up & cool down properly.
3. Encourage to use protective appliance.
4. Provide knowledge rehabilitation program & encourage to joining rehabilitation program after injury to avoid further injury.
5. Provide guidelines about maintaining proper hydration during exercise & rehydration after exercise.
6. Practice some stretching exercise.

Conflict of Interest

The authors declare that there is no conflict of interests.

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