

Stroke wise Injuries among Elite Level Swimmers

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Abstract

The primary objectives of the study were to quantify the injuries of elite level swimmers. Information on injuries were collected from different university teams which were participated in all India inter- varsity aquatic tournament held at Kerala university Trivandrum from 25th to 29th February 2008, by questionnaire prepared by Cromwell F.J. Walsh Gromeley for elite Gaelic Footballers (2000).

It was modified by the investigator & utilized for present study. Percentage was utilized to identify the injuries. The swimmers were asked to recall injuries over the proceeding three years. A total of 222 out of 150 swimmers sustained injuries. Most common situation giving rise to injuries were free style (48.19%), Butterfly (10.8%), Breast Stroke (26.12%) and back stroke (19.36%). The shoulder & knee being the most commonly injuries anatomical side. A most injuries were of soft tissue in nature & related to muscle & tendon.

Introduction

Swimming is a sports that can be played by all ages & both sexes indoor & outdoors, it can be highly competitive sports requiring a high level fitness, agility & co ordination or it can be relaxing & highly enjoyable recreation.

Swimming requires a variety of physical attributes & specific playing skills, therefore, participants need to train & prepared to meet at least a minimum set of physical, physiological & psychological requirements to cope with the demands of the game & to reduce the risk of injuries. (Mc. Master wc. 1999)

In the epidemiological studies, injuries occur in the training or matches, interrupt or hampered play (Sinku 2006,2007) Special treatment is required in order to continue the game or if the injury has mode playing impossible.

Swimming has received a little interest in sphere of sports medicine. Swimming is low risk sports, dominated by overuse injuries while recovery time from injuries is relatively long, but only a few working days are lost by the players to return back to play. (Recharadson et.al. 1991), thus leading to abuse of the injured sites.

In swimming, overuse injuries are the most frequent occurrence of injuries acute injuries are relatively rare as there is lack of bodily contact and swimming is at a slow speed (Richardson Allen B. 1987)

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The majority of injuries that effect swimmers causing disruption to training and performance are chronic in nature. These are related to repetitive micro trauma or overuse (kenal K. A, KnappLD1996)

Keeping in view the paucity of information about sports injuries in general and swimming playing in particular, an attempt has been made in this area to investigate the possible risk factors involved in swimming.

Methods:

Total 150 male & female swimmers were randomly selected as a subject for present study. Who were regularly participating for three years in inter-varsity swimming tournament aged between 17 to 25 year.

Information on injuries were collected from 150 swimmers who were participating in all India inter-varsity aquatic tournament which was held in kerla university Trivandrum from 25th February to 29th February 2008. A questionnaire was prepared by Cromwell F. J. Walsh Gromely (2000) for elite Gaelic football players & it was modified by the investigator. Percentage was computed to identify the injuries among varsity swimmers. The investigator personally contacted the team managers & coaches of the various varsity teams & the purpose of the study was explained to them. Further instruction was given by the investigator to the players to completion of the questionnaire.

Result:

A total of 222 out of 150 swimmers sustained injuries in varsity swimmers. Their age range was 17 to 25 years. The mean (S.D.) age of swimmers was (23.33)(17.8) cm. their weight was 62.25 (85.33) Kg. & 54.99 (4.78) Kg. Their training duration was 3.98 (0.88) hours & 2.33 (0.42) hours & their competition in one year 9.98 (3.33) & 5.28 (2.28) respectively.

The results of swimmers injuries are shown in table I to IV.

Figure 1. Percentage of stroke wise injuries among varsity swimmers

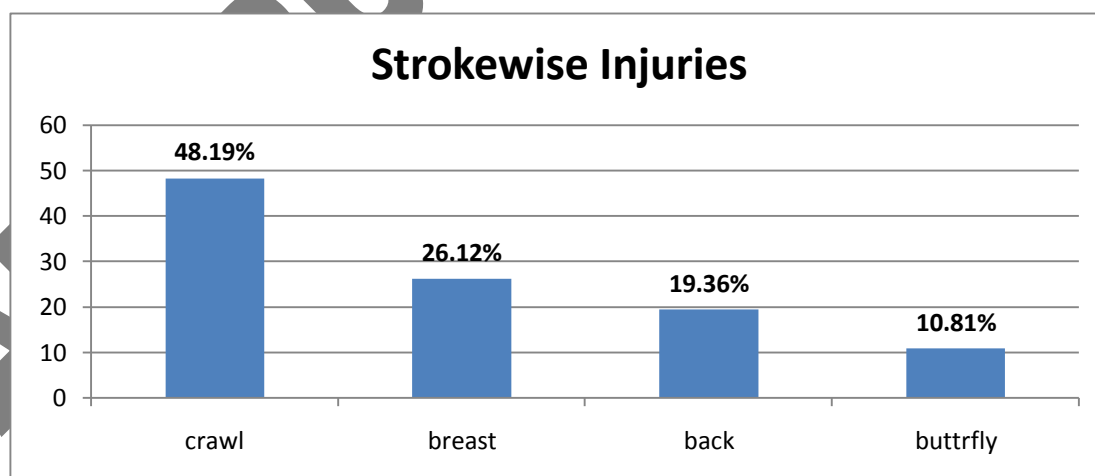


Figure 1 depicts the percentage of stroke wise injuries of varsity swimmers.

It can be observed that most common stroke of injuries was crawl (48.19%), Breaststroke (26.12%), Back Stroke (19.36%) & Butterfly (10.81%). Figure 1 indicates that the crawl & breast stroke were the most common involved stroke of injuries in swimming.

Figure 2

Percentage Of Stroke Wise Injuries Among Varsity Swimmers With Respect To Location.

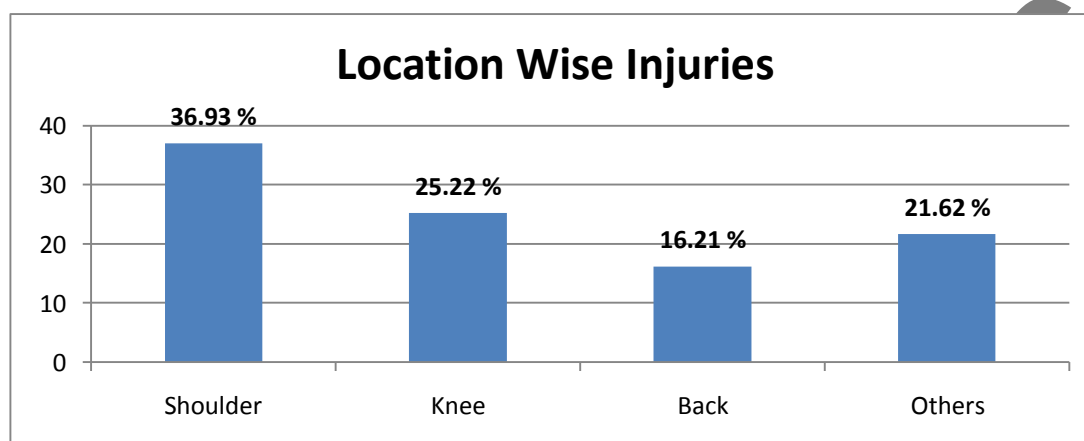
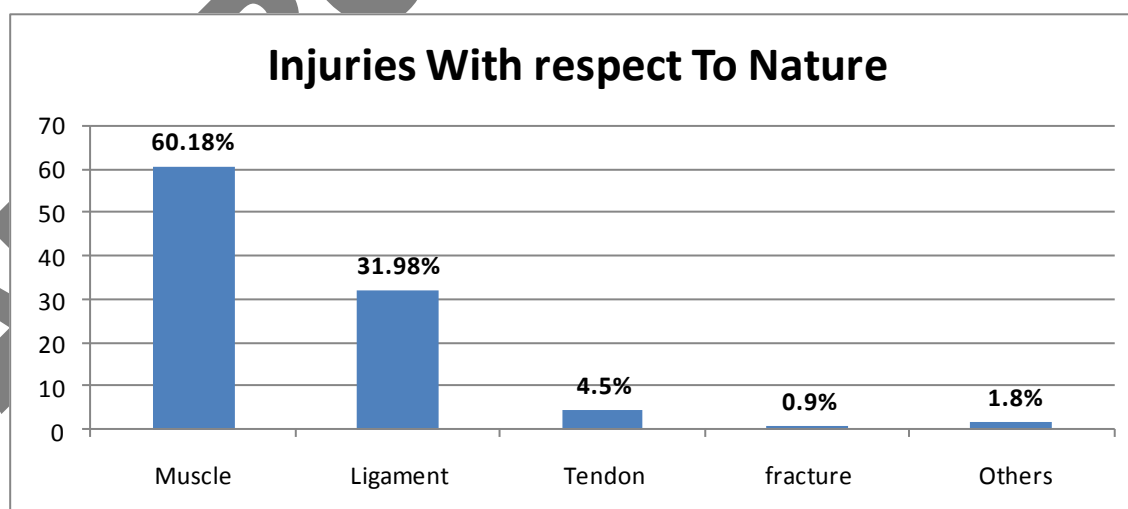


Figure 2 illustrates the most commonly injured anatomical site in swimming, maximum injured anatomical sites in swimming were found to be the region of shoulder (36.93%), Followed by Knee (25.22%), Back (16.21%) & others (21.62%). Figure shows that the shoulder & knee were the most involved sites of injuries in swimming.

Figure 3

Percentage Of Stroke Wise Injuries Of Elite Level Swimmers With Respect To Nature



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Figure 3 demonstrate the nature of injuries incurred by swimmers. Maximum incidence of injuries reported by the swimmers related to muscles (60.18%), followed By Ligaments (31.98%), Tendon (4.50%), Fracture (0.90%) & others (1.80%). Muscles & Ligaments injuries were the most frequently occurring injuries in swimmers.

Figure 4

Percentage of Recommendation of treatment of swimming Injuries

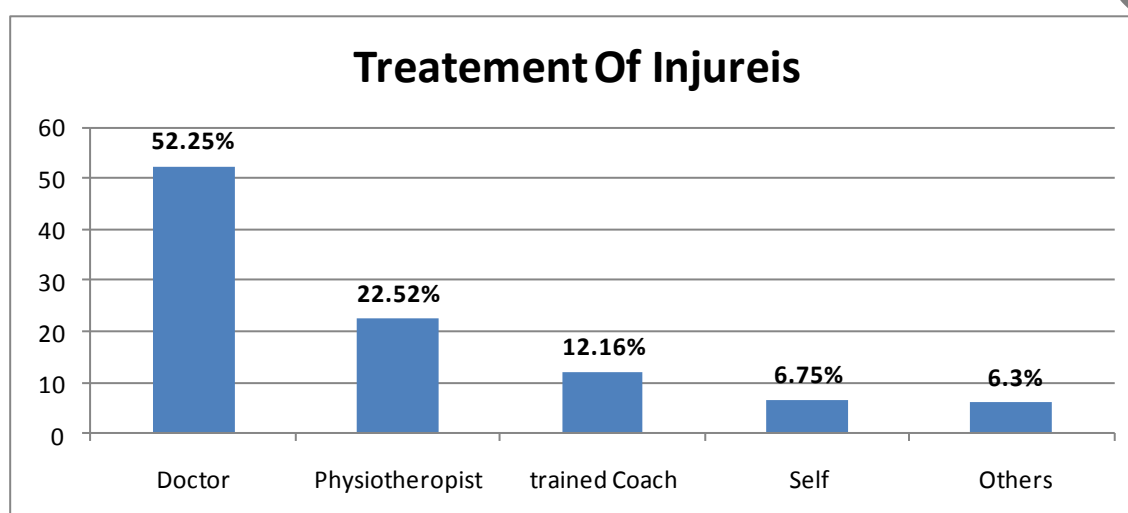


Figure 4 compares the method treatment obtained by swimmers for injuries incurred by them. It is observed that (52.25%) of swimmers got their injuries treated by a doctor, followed by (22.52%), (12.16%), (6.75%) & (6.30%) of swimmers who went to physiotherapist, trained coach, self & others for treatment. It was observed that doctors treated maximum swimmers than physiotherapist & trained coaches.

Discussion

This study reveals that (54.28%) injuries occurred during training while (45%) were occurred during competition. The relatively high incidence of injuries during training was probably due to bad technique, low fitness, & large amount of over training. The swimmers who are involved in crawl, breast stroke more likely to be injured. This is event form the fact that most injuries were sustained by the swimmers due to inferior conditions of swimming pool.

In this study most injuries acquired in the upper limb of which 36.93% related to shoulder, relatively high incidence of shoulder injuries is due to fact that shoulder charge is permitted while pull of the water. Sinku S.K. (2006) also found that upper limb injuries were most common in swimming.

A significant proportion of injuries occurred in lower limb region of which knee injuries pre dominated (25.22%).

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Muscles & ligaments injuries were the most common types of injuries to the swimmers. It may be due to the improper technique & low fitness level of swimmers. The least common injuries were of the most serious types & included fractures (.90%). About 100% of injuries required treatment of doctor treated (52.25%) of the injuries. Finally it is concluded that injuries are a very serious problem for varsity swimmers.

Conclusion

Most of injuries of swimmers are sustained in upper limb. Shoulder & knee are the most common occurring injuries among swimmers.

Study also concluded that

1. Most injuries were sustained to the free style & breast stroke
2. Regarding the nature of injuries muscles & ligaments injuries are the most commonly reported in swimming.
3. Upper limb injuries occurred in the shoulder
4. Maximum injuries occurred during training.
5. Regarding treatment of injuries, doctor is the most common attention provider of swimmers.

This research provides a platform for further research in the field of sports sciences.

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