



## A COMPARISON OF MEN AND WOMEN SWIMMING INJURIES ON INTER - DISTRICT COMPETATION IN TAMILNADU

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### **Abstract**

*The primary aim of the investigation was to compare the Men's and Women's Swimming injuries at district level with regard to various stages viz. injuries with respect to location, injuries in different strokes, nature of injuries, and injuries occurred during training and competition Information on injuries were collected from different district team which were participating in Tamilnadu state Aquatic tournament held at Chennai, velacherry (SDAT) from 25 to 29 February-2013, by questionnaires prepared by Cromwell F.J.Walsh Gromley for Elite Gaelic footballers (2000). It was modified by the investigator and utilized for present study. T-ratio was utilized to compare the injuries. The Swimmers were asked to recall injuries over the preceding three years. In this study total 150 questionnaires were administered. Out of 150 questionnaires 75 belong to Men's Swimmers and 75 belong to Women's Swimmers. In all 222 injuries out of 150 players were found out over the period, 123 and 99 injuries found out in Men's and Women's district Swimmers respectively. Significant injuries difference were found between Men's and Women's district swimmers ( $t=4.57$ ,  $P<.001$ ). While comparing injuries to Men's and Women's swimmers with respect to location. Significant injuries difference were found in Shoulder ( $t=5.4$ ,  $P<.001$ ), Knee ( $t=7.66$ ,  $P<.001$ ) and Back ( $t = 4$ ,  $P < .001$ ). No significant injuries differences were found between training and competition period as combined sample ( $t=1.75$ ), while considering the injuries in competition period separately, significant injuries difference were found between men's and women's swimmers ( $t=6.13$ ,  $P<.001$ ). When the difference of injuries considering with respect to strokes significant injuries difference were found in Back Strokes ( $t = 6.5$ ,  $P <.001$ ) and butterfly ( $t=6.09$ ,  $P<.001$ ). However, no significant differences were found in Breast Strokes ( $t = 1.66$ ) and Crawl ( $t = 1.23$ ). The Men's district swimmers have got more injuries than the Women's district swimmers, significant injuries difference were found in Shoulder, Knee and back. Mean while, significant injuries difference were found in Back stroke and Butterfly stroke to Men's and Women's swimmers. The results of the research provide a useful insight into the injuries in swimming.*

**KEY WORDS:** Incidence, Stroke, Sustained, Anatomical Site, Sex etc

### **INTRODUCTION**

Swimming is one of the most popular aquatic sports in the world. It is the act of propelling the body through water. Swimming injuries may be classified as either acute or due to overuse. Acute injuries are relatively rare as there is a lack of bodily contact and swimming is at a

relatively slow speed. Careless behavior in the pool environment can nevertheless, carry significant danger. Neck injuries with subsequent paralysis and death have been reported when swimmers and divers misjudges the water depth while diving in. This should not occur in those who have mastered the correct, shallow competitive

dive slips while running on wet pool sides can result in heavy falls on the hard tiled surfaces with consequent injury. The acute injuries that do occur in hands or catching fingers on the modern anti wave lane ropes can cause temporary impairment. Acute muscle strain can occur following failure to perform an adequate warm up. The majority of injuries that affect swimmers causing disruption to training and performance are chronic in nature.

Competitive swimming became popular in the extremely late century. The goal of competitive swimming is to beat the competitors in any event in water, tennis and other recreational activities are not good competitive wise. Swimming in competition should create the least resistance in order to obtain maximum speed. However, some professional swimmers who do not hold a national or world ranking are considered the best in regard to their technical skills. Typically, an athlete goes through a cycle of training in which the body is overloaded with work in the beginning and middle segments of the cycle, and then the workload is decreased in the final stage as the swimmer approaches competition.

The practice of reducing exercise in the days just before an important competition is called tapering. A final stage is often referred to as "shave and taper": the swimmer shaves off all exposed hair for the sake of reducing drag and having a sleeker and more hydrodynamic feel in the water.

Swimming is an event at the Summer Olympic Games, where male and female athletes compete in 16 of the recognized events each. Olympic events are held in a 50-meter pool, called a long course pool.

### **Open water**

In open water swimming, where the events are swum in a body of open water (lake or sea), there are also 5 km, 10 km and 25 km

events for men and women. However, only the 10 km event is included in the Olympic schedule, again for both men and women. Open-water competitions are typically separate to other swimming competitions with the exception of the World Championships and the Olympics.

### **Swim styles**

In competitive swimming, four major styles have been established. These have been relatively stable over the last 30–40 years with minor improvements. The four main strokes in swimming are:

- Butterfly (fly)
- Backstroke (back)
- Breaststroke (breast)
- Freestyle (free)

Events in competition may have only one of these styles except in the case of the individual medley, which contains all four. In this latter event, swimmers swim equal distances of butterfly, then backstroke, breaststroke, and finally, freestyle.<sup>[6]</sup> In Olympic competition, this event (called the "IM") is swam in these distances - 200 or 400 meters or yards. Some competition also swims the 100 yard or meter IM - particularly, for younger swimmers (typically under 14 years) involved in club swimming, or masters swimming (over 18).

## **METHODOLOGY**

### **Selection of Subjects**

Two groups of swimmers were targeted; Men's and Women's district swimmers. Who were regularly participating for three years in district swimming tournament aged between 17 to 25 years. Information on injuries were collected from 150 swimmers who were participating in tamilnadu state Aquatic tournament which was held in Chennai, velacherry (SDAT) from 25 February to 29 February 2013. A questionnaire was prepared by Cromwell F.J. Walsh Gromely (2000) for elite Gaelic

football players and it was modified by the investigator. R-ratio was computed to compare the injuries between Men's and Women's district swimmers.

### RESULTS

A total of 222 out of 150 Swimmers sustained injuries in district Men's and Women's swimmers. Their age range was 17 to 25 years. The mean (S.D.) age of Men's and Women's swimmers was 23.33

(1.78) and 23.10 (1.66) years, their height was 172.54 (8.33) cm. and 158.66 (7.78) cm., their weight was 62.25 (85.33) kg and 54.99 (4.78) kg., their training duration was 3.98 (.88) hours and 2.33 (.42) hours and their competition in one year 9.98 (3.33) and 5.28 (2.28) respectively. The results of swimmer's injuries are shown in table I to IV.

**TABLE – I**

#### Mean Scores, Standard Deviation and t-ratio of injuries to Men's and Women's Swimmers

Swimmers	No	Mean	S.Ds.	S.Ed.	t-ratio
Men's (123)	75	1.64	.52	.07*	4.57*
Women's (99)	75	1.32	.43		

\* Significant at .001 level.

With regard to injuries of Men's and Women's district swimmers obtained the mean values of 1.64 and 1.32 respectively, which are given in Table-1. The obtained  $t=4.57$  was significant at .001 level, which means that Men's and Women's district swimmers had differed in their injuries in favour of Men's district swimmers.

Sr. No.	Location	Swimmers	No.	Mean	S.Ds.	S.Ed.	t-ratios
1)	Shoulder	Men's	47	.62	.20	.05	5.4*
		Women's	35	.35	.13		
2)	Knee	Men's	34	.45	.16	.03	7.66*
		Women's	22	.22	.08		
3)	Back	Men's	19	.25	.09	.02	4*
		Women's	17	.14	.07		
4)	Others	Men's	22	.29	.11	.03	1.33 NS
		Women's	25	.25	.10		

\*Significant at .001 level., NS = Not significant

As Table-II Clearly indicates that significant injuries difference were found with regard to location of which Shoulder ( $t=5.4$ ,  $p<.001$ ), Knee ( $t=7.66$ ,  $P<.001$ ) and Back ( $t=4$ ,  $P<.001$ ) while others ( $t=1.33$ ), not significant injuries difference were found between Men's and Women's district swimmers.

**TABLE – III**  
**Mean Scores, Standard Deviation, and t-ratios of injuries between competition and training period to Men's and Women's district Swimmers.**

	Competition		Training		Total	
	Men's	Women's	Men's	Women's	Men's	Women's
Number	26	32	49	43	92	58
Means	2.07	1.15	1.40	1.44	1.42	1.56
S.Ds.	.72	.32	.39	.48	.49	.52
S.Ed.	.15		.09		.08	
t-ratios	6.13*		.44 Ns		1.75 Ns	

\* Significant at .001 level, NS = Not significant

Sr. No.	Stroke	Swimmers	No.	Mean	S.Ds.	S.Ed.	t-ratios
1)	Breast Stroke	Men's	21	1.47	.57	.15	1.66 NS
		Women's	22	1.22	.42		
2)	Back Stoke	Men's	18	1.66	.62	.16	6.5*
		Women's	16	.81	.29		
3)	Butterfly	Men's	10	1.9	.63	.21	6.09*
		Women's	08	.62	.21		
4)	Crawl	Men's	26	1.65	.59	.17	1.23 NS
		Women's	29	1.86	.68		

\* significant at .001 Level, Ns = Not significant

## Swimmers

As Table - IV shows that, injuries differences were found with respect to Back Stroke ( $t=6.5$ ,  $P < .001$ ), and Butterfly ( $t=6.09$ ,  $P < .001$ ) of Men's and Women's district swimmers, while Breast Stroke ( $t = 1.66$ ) and Crawl ( $t = 1.23$ ) were found not significant injuries differences between Men's and Women's district swimmers.

## DISCUSSION ON FINDINGS

This study reveals that the Men's district swimmers suffered more injuries as compared to Women's district swimmers. This may be due to the Men's district swimmers spend more time in training and competition period. While compare the injuries difference with respect to location significant injuries difference were found in shoulder ( $t = 5.4$ ,  $P < .001$ ), Knee ( $t = 7.66$ ,  $P < .001$ ) and Back ( $t = 4$ ,  $P < .001$ ) in favour of Men's district swimmers. While comparing injuries between training and completion period significant injuries difference were found during completion ( $t = 6.13$ ,  $P < .001$ ). Men's swimmer was found to have got more injuries as compared to Women's swimmers.

## CONCLUSION

Despite the limitations of this study, the results provide a useful insight into the nature, location and outcome of injuries in swimming at highest level. It is the first study to examine exclusively problem such as injuries to Men's and Women's swimmers. This research provides a platform for further research in the field of Physical Education, Sports and Sports Medicine. Finally, injuries are very serious problem for competitive swimmers.

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