

# PREVALANCE OF MUSCULOSKELETAL INJURIES IN TAEKWONDO PLAYERS

Ujwal Yeole<sup>1</sup>, Mayuresh Gore<sup>2</sup>, Gaurai Gharote<sup>3</sup>, Rasika Panse<sup>4</sup>,  
Pournima Pawar<sup>5</sup>, Shweta Kulkarni<sup>6</sup>

1 Associate professor, and Principal; 2 final yr. student 3,4,5,6, Assistant  
professor; Dept of Physiotherapy; Tilak Maharashtra Vidyapeeth Pune.

Corresponding Author: Dr. Ujwal Yeole  
Associate Professor and Principal

Dept of Physiotherapy; Tilak Maharashtra Vidyapeeth Pune.

Email id- drujwalyeole@gmail.com

## Abstract

**Background:** Taekwondo (TKD) is a popular martial art which has been accredited as an Olympic event since the 2000 Olympic Games of Sydney. **Aim And Objective:** To evaluate the prevalence of musculoskeletal injuries and factors associated with it in Taekwondo players. **Methodology:** Sports institution across Pune city where approached for players playing Taekwondo at district, state, national level competition. Total 35 players aged 13 to 35 years were recruited for this study. All the players were explained the purpose of study and

informed consent was taken. All the players were requested to fill up the pre designed questioner and data was collected. **Results:** Almost 77.14% mentioned to be practicing up to 2 hours for 3 to 4 times per week. Most of the players mentioned to be doing warm up and cooldown as a routine and using protective gear during training as well as competition. Ankle joint was the most injured joint 100% followed by (foot 60%), (elbow 60%), (wrist 60%), with (97.28%) mentioning injury during competition (85.72%) mentioning during training. **Conclusion:** There is high incidence of musculoskeletal injuries

in taekwondo players with common injuries of ankle.

**Keywords: Recurrent injuries, Taekwondoplayers, musculoskeletal injuries**

**Introduction:**

Taekwondo is a popular martial art which has been accredited as an Olympic event since the 2000 Olympic Games of Sydney.

1Taekwondo is one of the world's oldest forms of martial arts. If you've ever wanted to learn how to break boards or bricks with your hands, then Taekwondo could be the sport for you.7Taekwondo is a full contact sport where athletes are called to strike their opponents using kicks with full force within the sports rules.1 A large proportion (102 per cent) of the men's injuries were the result of receiving a blow from an unblocked attack.5

Taekwondo is a form of martial arts that combines high standing and jump kicks, as well as punches. Training in Taekwondo involves learning kicking, punching and blocking in various combinations of traditional sets.As students improve they receive different belts, with a black belt being the highest level. However, Taekwondo (as with all martial arts) It's a form of self-defence that involves strict mental and physical training and strong moral character.7In order to maintain the extraordinary health any major bodily component, demands precise,

frequent and vigorous exercise are necessary.6

As for athlete's safety concerns, the World Taekwondo Federation decreed rules concerning matches, as for example, athletes who participate in Taekwondo should hold "black belt" and should be over 16 years old. 3

This fact exposes Taekwondo practitioners to permanent risk of injuries like for the great majority of other contact sports.4

Taekwondo is an exciting, fast and dynamic sport which involves both men and women. It belongs to those sports which have their roots in martial arts since it is a sport of body contact-fighting and, ever since it was established as an Olympic game in 2000, has seen its reputation and spectatorship grew stronger and participation of athletes from all ages (started at age 5) develop rapidly.

Therefore, matters such as the safety of the athletes along with the avoidance of injuries are of great importance. The minimum criteria for Olympic game -2000 was that the Taekwondo should hold "black belt"; should be over 16 years old and punches were allowed to the front of the torso in the area covered by the chest protector worn by the athletes. During these games,Kicks were allowed to the torso and head, which was covered by a helmet andonly one point was given from referees for a successful blow. Athletes could win the match by means of a knockout, so contact was encouraged. In 2003 the

rules changed and ever since athletes win 2 points for every kick-punch contact on the opponent's head and an addan additional point for an eight-count knockout 3.

Although there is lack of literature regarding incidenceof injuries in Taekwondo sports, few studies reported studies report that the head and neck sustained most of the injuries in both elite male and female athletes in Taekwondo. Since Taekwondo requires the frequent use of the legs, it is predictable that the common mechanism of injury is during delivering or receiving a kick.Especially in men the round-house kick was often implicated. Regardless to the injury type, as expected in a contact sport, contusions are the most frequently injuries reported by male and female Taekwondo athletes.3

#### **Aims and Objectives:**

To evaluate the prevalence of musculoskeletal injuries and factors associated in Taekwondo players.

#### **Methods and Methodology:**

Study design: Cross sectional survey  
Study setting: Sports institutes across Pune city.

**Study population:** Taekwondo players playing at District, State, National.  
Sampling method: Convenient sample  
Sample size:90

Inclusion Criteria: players from the basic belt to the highest belt [from

white to black], Players age group of 13 to 35 years. All weight categories.  
Exclusion Criteria:Any history of surgery and fracture within past one year  
Outcome Measures: Questionnaire  
Procedures: Sports institutions across Pune city were approached for players playing taekwondo at district, state, national level competition. Total 90 players aged 13 to 35 years were evaluated amongst which 35players mentioned of havingmusculoskeletal injuries, were recruited for this study. All the players were explained the purpose of study and informed consent was taken. All the players were requested to fill up the pre designed questioner. Accordingly the data was collected and descriptive analysis was done.

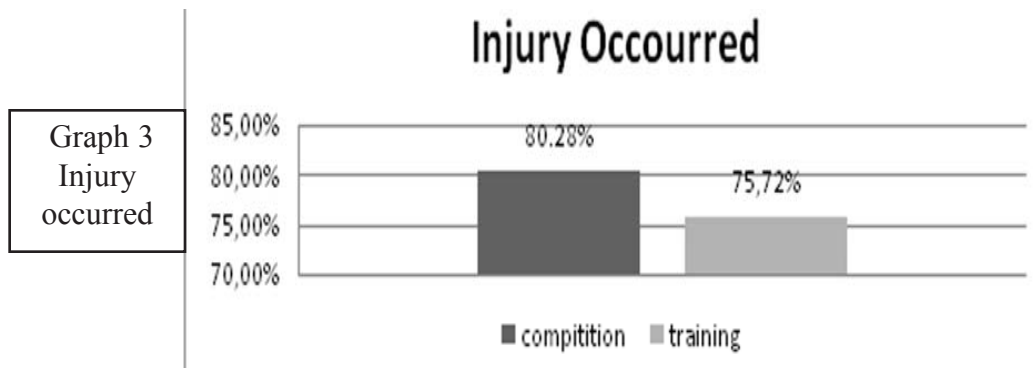
**Results:**Total 90 players across the Pune were approached with the age group of 13 to 35 with mean of [mean age17.39 + 3.45] with 50 males and 40 females. Amongst these players 49% played district level of competition and35% played state level of competition with16% player played national level of competition.

The Ankle joint found to be commonest injured (100%) joint followed by foot(94.28%), elbow(48.56%) and wrist(42.86%).

Table 1: Players Profile

<i>Years Practicing</i>	(60%) 1 year	(82.84%) 2-3 years	(60%) 4-5 years	(null) 6-7 years	(77.14%) 8+ years
<i>times/weeks practice</i>	(42.84%) 2 times	(77.14%) 3 times	(60%) 4 times	(60%) 5-6 times	(60%) 7 times
<i>hours practice</i>	(90.72%) 1 hour	(75.28%) 2 hours	3 hours null	4 hours null	5+ hours null
<i>length and freq</i>	satisfied=70.28%	Non-satisfied=95.72%			
<i>times/week sparring technique</i>	(95.42%) 1-2 times	(77.14%) 3 times	(48.58%) 4 times	(37.14%) 5-6 times	(25.72%) 7+ times
<i>hours/sessions sparring techniques</i>	(85.28%) 1 hour	(71.42%) 2 hour	(37.02%) 3 hour	(25.7%) 4 hour	(31.42%) 5 hour
<i>Stretch</i>	(89.78%) before	(37.14%) after	(89.78%) both		
<i>warm up</i>	(95.58%) always	(71.42%) sometimes	c= never null		
<i>cool-down</i>	(95.72%) always	(60%) sometimes	(54.28%) never		
<i>protective gear in training</i>	(94.28%) always	(94.28%) sometimes	(37.02%) never		
<i>protective gear in fight</i>	(98.56%) always	(65.7%) sometimes	(25.7%) never		

Table 2: Players Practice Patterns



Injury occurred more in competition 80.28% than in training which is 75.72%

#### Discussion:

The Ankle joint found to be commonest injured joint followed by foot, elbow and wrist. This could be related to the technique involving taekwondo game. The training sessions focused on specific skills can be helpful for preventing such injuries. The specificity of Taekwondo (i.e. circular and heading kicks) exposes the athletes to permanent risk of injuries during both training and competitions.<sup>2</sup>The study done by Kazemi M found that injuries were more frequent in the lower extremities (46.5%) than in upper ones (18%).

The rest of injuries occurred in back (10%), and head (3.6%).<sup>2</sup>As per the study done by P. Malliou; most players indicated acute injuries with contusion and laceration as most common, followed by sprain (instep, toes, and ankle), broken body region (arm and leg, fingers, nose), knee dysfunction, and joint dysfunction.<sup>3</sup>Use of protective gear is important for preventing injury and is mandatory to use the protective gear during fights. Almost 85.58% players mentioned of using sometimes protective gear during training and during competition with 8-10% mentioned not using protective gears at all. Almost 80.14% of players injured during training missed further training sessions with of players mentioned of missing competition for a term to 1 year because of

injury. And only 31.44% of players mentioned of consulting the medical personnel and or physiotherapist for the further treatment. Inclusion of technique specific skills and stretch during warm up and cool down for all players may reduce the incidence of injury. There is the need of creating awareness amongst the players for prevention of injuries as well as role of sports specific rehabilitation such as appropriate muscular strengthening and stretching of the programs.<sup>3</sup>  
Conclusion: There is high incidence of musculoskeletal injuries in taekwondo players with ankle being commonly injured joint.

Limitations And Scope: Further study can be done evaluating effectiveness of necessary preventive measures such as skilled training and rehabilitation on reducing incidence of injuries. Similar study can be done in large sample across different geographical areas.

#### References:

1. Ramazanoglu N (2012) Effectiveness of protective foot and forearm guards in Taekwondo. Arch Budo 8: 207-211.
2. Kazemi M, Shearer H, Choung YS (2005) Pre-competition habits and injuries in Taekwondo athletes. BMC Musculoskeletal Disord 6: 26.
3. Injuries in Taekwondo Athletes E. Zetou, A. Komninakidou, F. Mountaki, P. Malliou Department of Physical Education and Sport Sciences, Democritus University of

- Thrace, Komotini, Greece. Sept 2006
4. Injuries in Taekwondo August 2014 Performance Optimization in Taekwondo: From Laboratory to Field, Chapter: Injuries in Taekwondo, Publisher: OMICS Group eBooks, Editors: Monoem Haddad,
  5. Injury rates during the 1988 US Olympic Team Trials for Taekwondo Article?in?British Journal of Sports MedicineOctober 1989
  6. Doug Cook holds a 6th Dan Black Belt in the Korean martial art of taekwondo and is certified as an instructor and in rank by the United States Taekwondo (This article originally appeared in Totally Taekwondo magazine March 2014.)
  7. Martial Arts - Taekwondo

\*\*\*