

# THE PREVALENCE OF INJURIES AMONG PARTICIPANTS DURING THE 16<sup>TH</sup> NATIONAL SILAT CHAMPIONSHIPS 2012.

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## **ABSTRACT**

This study is a descriptive epidemiology on the frequency of injuries, characteristics, and type of injuries incurred during the 16th National *Silat* Championships 2012 competitions. This was a retrospective study by using a Pre Hospital Care Emergency Medicine PPUKM Form. All injuries sustained during the competition days were documented. The total number of participants involved in this tournament was 158 (114 males and 44 females). 51.6% participants sustained various injuries during the competition. The common sites of injuries involved the upper and lower extremities. The injuries sustained consist of swelling, fracture, dislocation, muscle sprain, strain and others. Most of the injuries were minor and did not require hospitalization. This study identified that soft tissue injuries due to blunt trauma were common among the *silat* participants. Strict observation of the tournament regulations, vigorous training and protective measures or equipments may contribute to the absence of severe or serious injury.

**Keywords:** *fracture, haematoma, injury, silat*

## INTRODUCTION

*Silat* is a Malay defence art which involves hundreds of different styles of strikes, joint manipulation, throws, bladed weaponry, or combination of all these attacks. Similar to the other combat sports, it consists of punching, kicking, take down an opponent, defensive blocks and attacking and defending movement. Large tournaments involving *silat* or other contact sports nationwide would require a medical standby. This study was conducted to determine the prevalence, type and pattern of injuries during the 16th National Silat Championships 2012. This would provide a general overview for personnel, equipment and training required in a medical standby for any similar event.

## METHODS

### *Objectives*

The general objective was to determine prevalence of injuries among athletes during the *silat* event. Specific objectives for this study were to determine the type, number, equipment required and necessity for hospital admission for the injuries sustained by athletes throughout the event.

### *Study description*

This was a cross-sectional study located at Kuala Lumpur Badminton Stadium, Cheras, Kuala Lumpur. Data was collected over a 6-day period from 24<sup>th</sup> to 29<sup>nd</sup> April 2012 during the 16th National *Silat* Championships 2012. All injuries sustained during the competition were documented at standardized injury report form (Pre-Hospital Care Emergency Medicine PPUKM Form)<sup>1</sup>. Injured participants were referred to the pre-hospital standby team for further treatment. During the *silat* tournament, official medical teams completed a report form following each match or competition. The

demographic data, details of injury or illness, diagnosis, and treatment were collected and analyzed. The paramedic scope of treatment in obtained. Only the participants of the sports *silat* aged from 18 and above were included.

### *Statistical analysis*

All data were recorded using a standardized data collection format and were coded using the latest version of Statistical Package of Social Studies (SPSS) with the aid of a clinical statistician. Ethical clearance from UKM Research Ethic Committee (UKMREC) was obtained. The study code was UKM1.5.3.5/244/FF-333-2012 .

## RESULTS

A total of 158 participants competed throughout 201 games. All of them aged from 19 to 25 years old. They were divided to 10 classes according to their body weight and gender. From this, 128 (95 males and 33 females) candidates fulfilled the criteria of this study. Nineteen (14.8%) participants required hospital referral. The highest percentage of injuries (18.2%) was identified among participants with body weight between 50 to 54 kg with total 12 participants (5 males and 7 females).

The total number of injuries throughout the tournament was 79 (Table 1), with 62 swelling or hematoma (78.5%), 4 sprain or strain (5.1%), 4 fractures (5.1%), 3 laceration wounds (3.8%), 3 abrasion wounds (3.8%) , 2 dislocations (2.5%) and 1 eye injury (1.3%). Four participants sustained closed fracture, which were fracture proximal phalanx of right big toe, non displaced fracture distal phalanx of left 5<sup>th</sup> finger, comminuted non displaced fracture proximal phalanx of left 5<sup>th</sup> finger and fracture head of left radius. Three participants sustain laceration wound over upper lip, right eyebrow and left hand.

Table 1 Type of injury sustained during the tournament

	Type of injury n (%)
SWELLING/HEMATOMA	62 (78.5%)
SPRAIN/ STRAIN	4 (5.1%)
FRACTURE	4 (5.1%)
LACERATION WOUND	3 (3.8%)
ABRASION WOUND	3 (3.8%)
DISLOCATION	2 (2.5%)
EYE INJURY	1 (1.2%)
TOTAL	79 (100)

According to table 2, most frequent site of swelling or hematoma was at the calf/leg which was 11(17.7%) and ankle with 10 (16.1%) participants. Hematoma was commonly seen in the extremities, as expected in this competition. No hematomas were observed in the head and neck region.

Table 2: Commonest site of swelling/hematoma

	Frequency	%
CALF/LEG	11	17.7
ANKLE	10	16.1
FINGER	9	14.5
KNEE	8	12.9
HAND	6	9.7
WRIST	6	9.7
ELBOW	3	4.8
SHOULDER	3	4.8
TOES	3	4.8

	FOOT	2	3.2
	THIGH	1	1.6
		62	100.00

Most frequent location of injuries was at the fingers (16.2%) and calf (16.2%). Lower limb injuries were the ankle (12.5%) and the knee (11.3%). Hand and wrist sustained 8.8% and 7.5% of injuries respectively. The details are given in Table 3 below.

Table 3. Distribution of injuries by body region

	site of injury (n)	%
FINGER	13	16.2
CALF/LEG	13	16.2
ANKLE	10	12.5
KNEE	9	11.2
HAND	7	8.7
WRIST	6	7.5
ELBOW	4	5
TOES	4	5
SHOULDER	3	3.7
FOOT	2	2.5
THIGH	2	2.5
LIP	2	2.5
NECK/CERVICAL	2	2.5
EYEBROW	1	1.2
EYE	1	1.2
BACK/LUMBAR	1	1.2
Total	80	100

## DISCUSSION

There was no injury which requiring hospital admission or urgent operative

intervention due to the non-weaponry nature of the *silat*, regular training, protective equipment and strict observation towards rules. The injury pattern includes bruises, hematoma, sprains, strains, fractures, dislocations and abrasion or laceration wounds whereby swelling or hematoma are the most common injuries. The pattern correlates with a study on karate by Arriaza R et al. Minimal injuries above the shoulder was due to the policy of the tournament which penalize any blow to that region. Upper and lower limbs had the highest incidence of injuries. The fingers, calf, leg, ankle, knee, hand and wrist were the most common area of injuries. This can be explained from the frequent use of these body parts during attacking and defending movement. In comparison to the torso and abdomen the limbs were not protected during competition.

Based on the information about the type of injury, distribution of injury and severity of injury paramedics can be better prepared for future *silat* or other similar events. By knowing the prevalence of the injuries and the risk factors, personnel or paramedics will be able to prepare the appropriate equipment required. Check list in table 4 shows essential items and equipment required for the standby which was devised from the pattern of these injuries.

ITEMS
Oxygen delivery device
IV kit
Intravenous fluids
Lignocaine
Automated External Defibrillator (AED)

Flash light
Blood pressure cuff
Wound cleaner
Basic toilet and suture set
Tissue adhesives and Thin adhesive strips (steristrips) for laceration wound
Spinal board and cervical collar
Required drugs – analgesia, NSAIDs, salicylates
Gauze pads
Bandage
Arm sling
Splints / Zimmer Splint
Red/ resuscitation bag
Sharps box

Table 4: Proposed check list of essential items and equipment required for a Silat championship

Adequate equipments can reduce frequency of hospital referral. None of the participants were admitted or underwent invasive procedures such as external fixation of fractures. Basic suture set and adhesive strips can be used to treat wounds on the site. Even though there were no cardio respiratory arrest, the basic resuscitation equipments are necessary. Cold spray and ice packs is not required as there is insufficient evidence for its use in acute ankle injury.<sup>3</sup> Simple laceration

wounds can be treated with tissue adhesives and thin adhesive strips at site. Lignocaine was added to the list for suturing and treatment of phalanx dislocations. Zimmer malleable splints can be used for fractures distally. Pre-hospital portable ultrasound to detect fractures can be used to detect fractures. Ultrasound examination is the

preferred first line test for patients with muscle, tendon and ligament injuries<sup>4</sup>.

### CONCLUSION

Adequate preparation for a *silat* tournament medical standby can significantly reduce the need for hospital visits, hence can save time and cost.

### REFERENCES

1. Pre Hospital Care Emergency Medicine PPUKM Form
2. Arriaza, R., Leyes, M., Zaeimkohan, H., Arriaza, A. The injury profile of Karate World Championships: new rules, less injuries. *Knee Surg Sports Traumatol Arthrosc*, 2009 17(12), 1437-1442.
3. Michel P.J VD B, Peter A.A S, Leendert B., Lieke W, Gino M.M.J K, What Is the Evidence for Rest, Ice, Compression, and Elevation Therapy in the Treatment of Ankle Sprains in Adults? *J Athl Train*. 2012 Aug; 47(4): 435–443.
4. Gina M. A., David J. W., : Ultrasound in sports medicine: A critical evaluation *Eur J Radiol* 2007: 62(1), 79-85