

Medical Services during the 24th Summer Universiade

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ABSTRACT

Background: International sports competitions are one of the mass gathering events which require a well-planned medical care system for large numbers of participants. The Universiade, the World University Games, is organized for university athletes every two years.

Methods: The medical service organization was presented and the medical care for injuries and illnesses provided during the 24th Summer Universiade were described.

Results: During 1 to 23 August 2007, a total of 5,641 patients aged 12-89 years (including 1,700 athletes) received medical care. There were 2,535 cases (44.9%) using the Athletes Village Polyclinic, 2,755 cases (48.8%) using the on-site medical units, and 351 cases (6.2%) using Thammasat Hospital. For the patients presented at the Athletes Village Polyclinic, muscle strain was the most common injury (n=287, 34.1%), and musculoskeletal system problems were the most common illnesses (n= 484, 27.33%). Nineteen patients required hospital admission at Thammasat Hospital.

Conclusion: This information might be useful for planning medical services in international multi-sport competitions in the future.

Keywords: Sports injury, Universiade, World University Games, mass gatherings, medical service

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International sport competitions are one of the mass gathering events and require a well-planned medical care system for large numbers of people during a particular short period of time. The Universiade, often referred to as the World University Games, is an international multi-sport event, organized by the International University Sports Federation (FISU) for university athletes and is important second only to the Olympic Games. This event occurs every two years in different cities and encompasses a cultural festival in addition to the sport competitions.

The 24th Summer Universiade (SU24) was hosted in Bangkok, Thailand during 8th to 18th August 2007. It had the highest number of participants (9,007 participants from 152 countries).¹ The SU24 consisted of 15 sports: athletics, aquatic sports (swimming, diving, water polo), basketball, fencing, football, gymnastic, judo, table tennis, tennis, volleyball, badminton, golf, shooting, softball and taekwondo. A competition of this magnitude creates a challenge for the medical staff in providing medical services to meet the healthcare needs of athletes, officials, spectators, members of the media and the workforce.

The purposes of this study were to present the organization of the medical services and to describe the medical care provided during the SU24. This information can be useful for future events.

MATERIALS AND METHODS

Participants

Based on accreditation status, there were 6,093 athletes (male 3,389 and female 2,704), 2,914 team staff (including 371 medical personnel), 754 international judges and referees, 2,029 media staff, 676 FISU family members, and 31,031 local organizing staff. Medical care was also provided to spectators in each competition, the opening ceremony, and the closing ceremony. The medical encounter form was approved by the Medical Service Committee. All patients participated in this study provided written consent before receiving medical care.

Medical care organization

Medical services for the SU24 were provided during 1st to 23rd August 2007 corresponding to the operational duration of the athletes village. Medical service units were set up at the athletes village, the main referral hospital, all competition and training venues, and also non-competition

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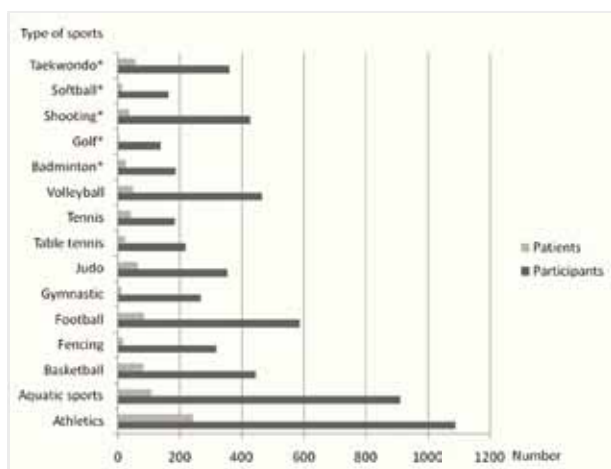


Fig 1. Numbers of the athletes and patients in each type of sports using the medical services at the Athletes Village Polyclinic; * optional sports in the 24th Summer Universiade

relatively higher during the competition period (8th -18th August) than during pre- and post-competition periods as shown in Fig 2. The majority of the patients visited the medical clinic during the day shift (n = 1,036; 53.85%) followed by the evening shift (n = 788; 40.96%) and the night shift (n = 100; 5.19%). One hundred and thirty-five patients (5.3%) were referred to Thammasat Hospital for investigation and specialist consultation. Eight cases required short term observation at the AVP.

TABLE 2. An overview of the pattern of injuries in the patients receiving medical care at the Athletes Village Polyclinic.

| | Athletes n, (%) | Non-athletes n, (%) | Total n, (%) |
|-----------------------|--------------------|------------------------|-----------------|
| Type of injury | n= 428 | n= 414 | n= 842 |
| Contusion | 21 (4.9) | 26 (6.3) | 47 (5.6) |
| Abrasion | 58 (13.6) | 65 (15.7) | 123 (14.6) |
| Laceration | 23 (5.4) | 30 (7.2) | 53 (6.3) |
| Tendon injury | 32 (7.5) | 14 (3.4) | 46 (5.5) |
| Strain | 139 (32.5) | 148 (35.7) | 287 (34.1) |
| Sprain | 98 (22.9) | 89 (21.5) | 187 (22.2) |
| Dislocation | 3 (0.7) | 2 (0.5) | 5 (0.6) |
| Fracture | 29 (6.8) | 3 (0.7) | 32 (3.8) |
| Other | 25 (5.8) | 37 (8.9) | 62 (7.4) |
| Site of injury | n= 479 | n= 513 | n= 992 |
| Head and face | 29 (6.1) | 15 (2.9) | 44 (4.4) |
| Tooth | 7 (1.5) | 2 (0.4) | 9 (0.9) |
| Neck | 7 (1.5) | 28 (5.5) | 35 (3.5) |
| Chest | 4 (0.8) | 1 (0.2) | 5 (0.5) |
| Abdomen | 4 (0.8) | 3 (0.6) | 7 (0.7) |
| Back | 47 (9.8) | 93 (18.1) | 140 (14.1) |
| Shoulder | 44 (9.2) | 33 (6.4) | 77 (7.8) |
| Arm | 7 (1.5) | 13 (2.5) | 20 (2.0) |
| Elbow | 22 (4.6) | 11 (2.1) | 33 (3.3) |
| Forearm | 6 (1.3) | 6 (1.2) | 12 (1.2) |
| Wrist | 11 (2.3) | 8 (1.6) | 19 (1.9) |
| Hand | 19 (4.0) | 43 (8.4) | 62 (6.3) |
| Hip | 3 (0.6) | 5 (1.0) | 8 (0.8) |
| Thigh | 42 (8.8) | 25 (4.9) | 67 (6.8) |
| Knee | 62 (12.9) | 35 (6.8) | 97 (9.8) |
| Leg | 61 (12.7) | 47 (9.2) | 108 (10.9) |
| Ankle | 45 (9.4) | 42 (8.2) | 87 (8.8) |
| Foot | 40 (8.4) | 79 (15.4) | 119 (12.0) |
| Other | 19 (4.0) | 24 (4.7) | 43 (4.3) |

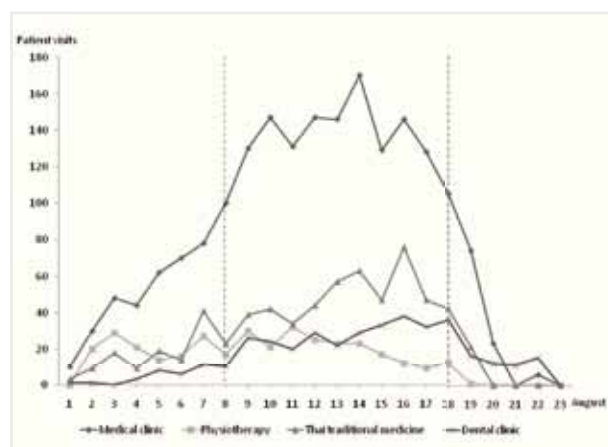


Fig 2. The number of the patients using each medical facility at the Athletes Village Polyclinic during the 24th Summer Universiade (competition period: 8th-18th August 2007).

On-site Medical Unit

The OMU provided medical care to 2,755 cases (690 athletes, 25.1%). Although the majority of the OMU services were competition and training venues, this number also included 82 cases in three official hotels, 86 cases at the press center, 69 cases during the opening ceremony, and 73 cases during the closing ceremony. There were 61 referral cases from the OMU. Forty cases (65.6%) were referred to Thammasat Hospital and 9 cases (14.8%) were referred to the AVP. The remaining cases were referred to other hospitals that depended on the severity of injury/illness and the venues locations.

Thammasat Hospital

Thammasat Hospital evaluated 351 cases (168 athletes, 47.9%). Nineteen patients including two athletes, required hospitalization. Four cases needed surgical interventions (one appendectomy, one laser surgery for retinal detachment, and two debridement of soft tissue infection). Blood tests were performed in 42 cases, and radiographic examinations were performed in 135 cases. Four cases required CT scan and four cases were referred to Siriraj Hospital for MRI.

DISCUSSION

During an international multi-sport competition, the medical care system is an important part and should be well established. Even though care of the athletes is essential, appropriate medical care should be also available to all involved in the events.² Medical services during the SU24 were set up for all competition and training venues and also covered the athletes resident and non-competition venues including the official hotels, the press center, and during the opening and closing ceremonies.

Each Summer Universiade is composed of 10 compulsory sports, but optional sports modalities can be chosen by the host country. In the SU24, five optional sports were included: badminton, golf, shooting, softball and taekwondo. The number of patients in the athletes group were high in athletics and aquatic sports which is similar to the previous reports in other international competitions.³ Although they are non-contact sports (except water polo), the high number of participants in various events in these types of sports could be one explanation.

The anatomic location and type of injury found in this study were similar to the previous ones that reported strains and sprains as the most common causes of injury and these are more prevalent in the lower extremity and back when compared to the upper extremity.³⁻⁵

As the AVP was close to the Thammasat Hospital in the same campus area, there was no need for blood and radiographic capabilities in this medical facility. Therefore, cases in need of further investigation were referred to the hospital, with the aid of a 24 hour ambulance service. Because of this setting, the local organization saved on instrument and personnel costs, and we believe that no patient had deterioration of their clinical symptoms during transfer.

The Thai traditional medicine facility was included in the AVPs service with the approval of the FISUs international medical committee. This facility was an optional treatment for musculoskeletal complaints consequent to overuse, subacute or chronic injury. If a patient expressed a request to use this facility, they were evaluated by a physician and all procedures were explained. When the patients presented with an acute musculoskeletal injury, cold compression was preferred. No complication was reported from the Thai traditional medicine facility.

The number of non-athletic patients in each medical service unit was relatively high, and this might be the result of easy accessibility to these services and the fact that it was free of charge. Even though there were enough interpreters at these units, the demand for personnel with foreign language abilities increased especially when the non-English speaking foreign patients required hospital admission.

The numbers of patients in this study represented the workload and medical care provided by the medical service rather than the prevalence of injuries or illnesses. Since some countries had their team physicians, the number of the patients using the local medical service were not all that received medical care during this event.

CONCLUSION

Providing medical care in the mass gathering sport events is a big challenge for the medical teams. The data from comparable events can provide the guidelines for estimating the number of patients, types of injury or illness, and potential problems. This report provides information on medical organization and overall medical care provided during the SU24. Muscle strain was the most common injury, and musculoskeletal system problems were the most common illnesses of the patients treated at the AVP. This information might be useful for planning medical services in international multi-sport competitions in the future.

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