Provision of physiotherapy at the Tsing Ma Bridge international marathon and 10 km race in Hong Kong

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Abstract
This report examines the delivery of sports physiotherapy at the Tsing Ma Bridge marathon and 10 km race in Hong Kong. The incidence, type of injury encountered, and treatment modalities selected are examined. The report also highlights the flexibility required when planning the provision of such a service. (Br J Sports Med 1998;32:336–337)

Keywords: marathon; physiotherapy

The Tsing Ma Bridge International marathon and 10 km race 4 May 1997 was one of the many events to celebrate the completion of the world's longest suspended road-rail link. The event attracted international runners from Great Britain, Canada, Australia, Denmark, Germany, Taiwan, Macau, Brunei, Kazakhstan, and New Zealand. A total of 5500 runners entered the competition, with 900 runners participating in the marathon and 4600 in the 10 km run, making it the biggest running event ever in Hong Kong.

Preparation
Twenty physiotherapists volunteered to help in the provision of on field services during the race. The planning of physiotherapy coverage was based on the nature of the course, the expected weather conditions, number of runners, and their fitness levels.

As the road had not yet been opened for public transport, detailed planning of emergency evacuation, proper deployment of physiotherapy, and medical coverage was crucial. The physiotherapy team manager visited the site twice and it was decided that the physiotherapy depots would be situated at the half marathon site and the finishing line. A medical doctor and a St Johns Ambulance team were also present at the finishing line to cover any possible medical emergencies.

The runners began at the eastern entrance of the Tsing Ma Bridge, then traversed the entire 3.5 km long Lantau Link, continued along the North Lantau Expressway and onward to the turning point at Tai Ho. The runners for the 10 km race made their turn at the Lantau Toll Plaza. The whole route was relatively flat.

The weather during May to August is usually hot and humid with occasional showers and thunderstorms. The average temperature is 25.9°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet bulb globe temperature range of 23–28°C with mean relative humidity of 83% and wet bulb temperature of 23.7°C. The wet...
was expected. Strong thunderstorms roamed the area before the commencement of the race and heavy rain continued during the five hours of competition.

Results of physiotherapy service
A data entry sheet was used to document the record of each runner requiring physiotherapy services. Apart from the profile of the athlete, details of the nature of the complaint, type and site of injury, relevant past history, and the treatment given were recorded by the treating physiotherapist.

Table 1 summarises the statistics of the injured runners. Seventy one (59 men, 12 women) required physiotherapy services, 65% (n = 46) in the marathon and 35% (n = 25) in the 10 km race. Twenty four participants indicated that they had had no previous experience in either 10 km or marathon competition. Twenty four (34%) runners stated that their injuries were chronic in nature. None of the runners had a history of major medical illness and only three had been taking non-steroidal anti-inflammatory drugs before the race. The incidence of lower limb injuries, at the thigh, knee, and leg, was the highest. The most common injury was soft tissue (73%), with muscle cramps ranked second (13%). Of the soft tissue injuries, 68% (n = 48) were muscle strains, followed by ligamentous sprain (n = 11, 15%) and contusion injuries (n = 7, 10%). Massage and/or manual stretching were the most frequently used treatments (85%). Cryotherapy contributed only 10% of all the services rendered. Follow up services were available on request.

Discussion
The sudden change to cool weather and thunderstorms obviously alleviated possible heat stress problems. The mean temperature recorded was 24.7°C with a total rainfall of 37.9 mm. One runner reported dizziness after the race, probably caused by exhaustion, and required medical attention.

It is difficult to comment on the rate of injuries other than those reported at the physiotherapy depot. However, the incidence of runners seeking physiotherapy service (1.3%) and the percentage of soft tissue injuries were similar to those in the 1980 Melbourne marathon study.2 The incidence of muscle cramps (13%) was lower than reported in the 1980 Melbourne marathon study (19%) and the Grandma’s marathon 1995 (36.4%).2,3 As muscle cramps are mostly caused by mineral loss and dehydration as a result of profuse sweating,4 the weather conditions on the day of the race, markedly reducing the chance of dehydration and hyperthermia, probably explain this.

Conclusion and recommendation
The results of this on field physiotherapy service are comparable with those reported for other marathon races. Under more adverse weather conditions, it is expected that the injury rate would have been higher. Physiotherapists should therefore be flexible when making contingency plans, adapting to sudden changes in climatic conditions.