THE EPIDEMIOLOGY OF INJURY AND ILLNESS OF ATHLETES AT THE INDIAN OCEAN ISLAND GAMES 2019

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Background The Indian Ocean Island Games is a multi-sport event that occurs every four years and includes athletes from seven islands of the Indian Ocean, namely, Comoros, Reunion, Mayotte, Madagascar, Maldives, Seychelles, and Mauritius.

Objective This study aims to describe the injury and illness epidemiology of the athletes participating during the 2019 Indian Ocean Islands Games.

Material and Methods This prospective cohort study recorded injury and illness cases from athletes who competed in these Games. All medical physicians received detailed instructions and training on data collection using an injury report form. All athletes (minor and adults) who provided consent, or consent given from the minors’ guardians, were included in this study. Athletes who did not provide consent for this study were excluded.

Results 1,521 athletes (531 women and 990 men) reported 160 injuries (injury incidence rate of 10.5%) and 85 illnesses (illness incidence rate of 5.6%). Percentages of distribution of injuries were highest in football and basketball. Most injuries occurred during competition compared with training. Joint sprains were the most common type of injury (28%), followed by muscle strains (19%). Men sustained more injuries (79% vs. 21%). Similarly, men sustained more illness than women (57% vs. 43%). Most illnesses affected the respiratory system (67%), and infection was the most common cause of illness (84%) in participating athletes.

Discussion These findings are similar to previous events in other parts of the world. However, unique ailments, not previously reported on, were discovered.

Conclusion Epidemiological data from this study can be inferred to athletes who compete in similar multi-sport events and/or Olympic Games in the Indian Ocean region.
Outcome measurements: Difference between the two WBGT variables (WBGTdiff = WBGTavg - WBGTavg) for start time and total race exposure (hours) categories (regression modelling).

Results: There was a significant greater WBGTdiff (p < 0.0001) in later start time categories (WBGT diff > in categories 07h01-08h00 = 0.38, 08h01-09h00 = 0.86, and > 09h00 = 1.17 vs. reference < 07h00). Similarly, there was a significant greater WBGTdiff (p < 0.0001) in the longer race exposure categories (WBGT diff > in categories 3hr45min-4hr30min = 0.24; 4hr31min-5hr30min = 0.51; > 5hr30min = 0.56 vs. reference < 3hr45min).

Conclusions: Average race day WBGT underestimated environmental risk exposure in an endurance sports event characterized by staggered race start times and wide variations in individual total race times. We suggest that individualized environmental risk exposure be used in future studies relating risk of medical encounters to environmental exposure.

Background: Risk factors associated with overuse injuries in cyclists (OICs) in recreational cyclists have not been well studied.

Objective: To determine the risk factors associated with OICs in recreational cyclists participating in a mass community-based cycling event.

Design: Cross-sectional study.

Setting: Cape Town Cycle Tour (CTCT) 2016.

Patients: 21824 consenting cyclists (60.8% of 35914). Race entrants (n=35914) completed an online pre-race medical screening questionnaire.

Interventions (or Assessment of Risk Factors): The online pre-race medical screening questionnaire identified 617 cyclists with a history of OICs. Categories of possible risk factors that were explored included demographics, training/racing history, history of chronic disease, and medication use.

Main Outcome Measurements: Prevalence ratio (PR) of OICs were explored using multi-variate analyses.

Results: The PR of OICs was similar in male and female cyclists, but was significantly higher in older (>50 years) cyclists (vs. ≤ 30 yrs PR = 1.6; vs. 31 to < 40 yrs PR = 1.5; vs. 41 to < 50 yrs PR = 1.4; p < 0.0001 vs. age categories). Independent risk factors associated with OICs (adjusted PR for gender and age) were: 1) training/racing variables [increased weekly training/racing (PR = 1.1, p = 0.0003), increased years of participation in cycling events of > 2 hours (PR = 1.1, p = 0.0189), higher average racing speed category (km/h) (PR = 1.04, p = 0.0368)], 2) chronic disease history [symptoms of cardiovascular disease (PR = 2.3, p = 0.0026), respiratory disease (PR = 1.6, p = 0.0001), nervous system/psychiatric disease (PR = 1.5, p = 0.0082), and gastrointestinal tract disease (PR = 1.4, p = 0.0225)], and 3) medication use [prescribed medication use (PR = 1.2, p = 0.0226), analgesic/anti-inflammatory medication used before or during racing (PR = 5.1, p < 0.0001)].

Conclusions: Increased training, years of participation in endurance cycling events, older, chronic disease and medication use are novel independent risk factors associated with OICs. However, the causal relationship, including the direction, between OICs and these factors need to be established, before considering these in the design and implementation of prevention programs.

Background: Injury-related medical encounters (injMEs) are common in mass community-based participation cycling events, but there are limited data on the risk factors associated with injuries in endurance cycling events.

Objective: To determine the risk factors associated with injMEs in a mass community-based endurance cycling event.

Design: Retrospective, cross-sectional study.

Setting: Cape Town Cycle Tour (109 km), South Africa.

Participants: 102251 race starters.

Assessment of Risk Factors: All injMEs (and a subgroup of serious injMEs) for the 3 years were recorded by race medical doctors and nurses and grouped into main anatomical area of injury. The following possible risk factors associated with injMEs were explored: sex, age, cycling speed and environmental exposure [calculated as average individual Wet-Bulb Globe Temperature (WBGTavg)].

Main Outcome Measures: Independent risk factors associated with injMEs, serious injMEs, and injMEs by main anatomical areas using a Poisson regression model.

Results: For all injMEs, the independent risk factors associated during an endurance cycling event were: sex (women vs men p = 0.0001), older age (p = 0.0005), faster cycling speed (p = 0.0001) and higher average individualised Wind Speed (aiWindSpeed, p < 0.0001). The only risk factor for serious life-threatening injuries was women (p = 0.0413). For specific main anatomical areas the risk factors were: head/neck (women), upper limb (women, older age, faster cyclists), trunk (women, higher aiWindSpeed) lower limb (higher aiWindSpeed).

Conclusion: Women, older age, faster cycling speed higher aiWindSpeed were all risk factors for acute injuries during an endurance cycling event. These risk factors should help inform race organisers and medical teams on race day to ensure the best medical care is given, and effective acute injury prevention programmes are disseminated.