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INDEPENDENT RISK FACTORS ASSOCIATED WITH ILLNESS-RELATED MEDICAL ENCOUNTERS DURING A 109 KM CYCLING EVENT ARE FEMALES, OLDER AGE, SLOWER CYCLING SPEED AND WARMER ENVIRONMENTAL CONDITIONS: A SAFER STUDY IN 102251 RACE STARTERS

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

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

Design Retrospective, cross-sectional study.

Setting 2012–2014 Cape Town Cycle Tour (109 km), South Africa.

Participants 102251 race starters.

Assessment of Risk Factors All illMEs and a subgroup of serious illMEs for 3 years were recorded and also grouped into common illnesses by organ system affected. The following possible risk factors associated with illMEs were explored: sex, age, cycling speed and environmental exposure [calculated as average individual Wet-Bulb Globe Temperature (aiWBGT)].

Main Outcome Measures Independent risk factors associated with illMEs, serious illMEs, and illMEs by organ system affected using a Poisson regression model.

Results Independent risk factors associated with all illME during an endurance cycling event were slow cycling speed ($P=0.009$) and higher aiWBGT ($P<0.001$). Risk factors associated with serious and life-threatening or death ME were older age ($P=0.007$) and slower cycling speed ($P=0.016$). Risk factors associated with specific common illME were fluid and electrolyte disorders (females, older age, and higher aiWBGT) and cardiovascular illness (older age).

Conclusions Females, older age, slower cycling speed, and higher aiWBGT were associated with illME in endurance cycling. These data could be used to design and implement future prevention programs for illME in mass community-based endurance cycling events.

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EXPERIENCED RUNNERS WITH AN ABOVE AVERAGE TRAINING LOAD HAVE THE HIGHEST RISK OF EXERCISE ASSOCIATED MUSCLE CRAMPING (EAMC)

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Background Running experience and training may be risk factors for exercise associated muscle cramping (EAMC).

However, multiple experience and training variables are inter-dependent. A latent class variable may be used to test associations between multiple experience and training variables and EAMC.

Objective Is there an association between EAMC and a latent class training variable, based on multiple inter-dependent experience and training variables?

Design Cross-sectional study.

Setting Two Oceans Marathons 2012–2015.

Patients (or Participants) 76211 consenting race entrants.

Interventions (or Assessment of Risk Factors) Runners completing a pre-race screening questionnaire reported a history of EAMC and multiple experience and training variables: years of recreational running, years of racing, weekly training frequency, 12 months training distance, average training speed. Multiple experience and training variables were used to inform a latent class variable dividing runners into mutually exclusive classes so as to best explain the meaning of the chosen classes. Five experience/training classes (ET classes) were identified: ET class 1 (less experienced runners, lowest training) (64%), ET class 2 (average experience, average training) (18%), ET class 3 (fairly experienced, above average training) (8.6%), ET class 4 (2nd least experience, training far above average) (6.4%), ET class 5 (very experienced, above average training) (3%).

Main Outcome Measurements Prevalence of EAMC (%) by ET classes (1–5).

Results There were significant differences in EAMC prevalence among ET classes ($p<0.0001$). EAMC prevalence was highest in ET class 5 (27%) (very experienced, above average training) vs. ET class 1 (11%) (less experienced runners, lowest training).

Conclusions Runners with more experience and an above average training profile had the highest prevalence of EAMC. Using ET classes to categorise runners by experience and training, instead of multiple individual inter-dependent training variables, may be more informative to explore relationships between running experience, training variables and medical conditions such as EAMC.

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ABSTRACT WITHDRAWN

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THE USE OF ARTIFICIAL INTELLIGENCE TOOLS TO ESTIMATE RUNNING-RELATED INJURY RISK PROFILES IN RECREATIONAL RUNNERS

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Background The development of running-related injury (RRI) prevention programmes is based on aetiology described in longitudinal studies. Such studies have been conducted assuming that risk factors may influence the occurrence of RRIs under