عنوان مقاله:

Trend Analysis and Temporal and Spatial Distribution of Wet Bulb Globe Temperature as a Heat Stress Index in Iran during the Summer Season over a ۳۰-Year Period

محل انتشار:

فصلنامه بهداشت محیط و توسعه پایدار, دوره 6, شماره 4 (سال: 1400)

تعداد صفحات اصل مقاله: 18

نویسندگان:

Gholamabbas Fallah Ghalhari - *Department of Climatology, Faculty of Geography and Environmental Sciences, Hakim Sabzevari University, Khorasan-Razavi, Iran.*

Somayeh Farhang Dehghan - *Environmental and Occupational Hazards Control Research Center, School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, Tehran, Iran.*

Elham Akhlaghi Pirposhteh - *Department of Occupational Health Engineering, School of Medical Sciences, Tarbiat Modares University, Tehran, Iran.*

Mehdi Asghari - *Department of Occupational Health and Safety Engineering, School of Public Health, Arak University of Medical Sciences, Arak, Iran.*

خلاصه مقاله:

Introduction: Global warming is one of the most important environmental problems that have raised researchers' attention. The present study aimed to analyze heat stress trends using the Wet Bulb Globe Temperature (WBGT) index in the country of Iran during the summer over a ۳۰-year period. Materials and Methods: Daily summertime statistical data regarding mean temperature and mean relative humidity, taken from ۴۰ synoptic meteorological stations across Iran during a ۳۰-year period were obtained from the Iranian National Meteorological Department. The De Martonne climate classification system was used to categorize various climate regions of Iran. The WBGT index was calculated using the formula given by the Australian Bureau of Meteorology. The Mann-Kendall statistical test and the Sen's slope estimator were used to analyze the trends of the WBGT index. Results: The WBGT index had an upward trend during the three months of June, July, and August in ۷۱.۴۲%, ۵۷.۱۴%, and ۶۶.۶۶% of all stations and this trend was statistically significant in ۵۳.۳۲%, ۵۰%, and ۴۲.۸۵% of those stations, respectively. Moreover, throughout the summer, ۴۵% of the WBGT index measurements were in the medium range (۱۸-۲۳°C), ۳۷.۵% were in the high range (۲۳-۲۸°C), and ۱۷.۵% were in the very high range (> ۲۸°C). Conclusion: The WBGT index followed an upward trend during the summer, especially in semi-arid regions of Iran. Considering the phenomenon of global warming, it is essential to monitor, plan ahead, and take necessary precaution measures for sensitive populations who are at high risk areas of the country.

کلمات کلیدی:

Heat Stress, Wet Bulb Globe Temperature, Trend Analysis, Iran.

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1361907