

عنوان مقاله:

Investigating the Levels of Thermal Stress in Kerman City in ۲۰۱۶ Using Thermal Indices: WBGT, ESI, HI, HSI, and SWreq

محل انتشار:

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نویسندگان:

Sajad Zare - Assistant Professor, Department of Occupational Health, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran

Rasoul Hemmatjo - Assistant Professor, Department of Occupational Health, School of Public Health, Urmia University of Medical Sciences, Urmia, Iran

Hossein Elahi Shirvan - Student Research Committee, Kerman University of Medical Sciences, Kerman, Iran

Naser Hasheminejad - Associate Professor, Department of Occupational Health, School of Public Health, Kerman University of Medical Sciences, Kerman, Iran

Keyvan Sarebanzadeh - Student Research Committee, Kerman University of Medical Sciences, Kerman, Iran

Khodabakhsh Zare - Occupational Health Engineering, Shiraz University of Medical Sciences, Shiraz, Iran

Mohammad Faridan - Assistant Professor, Department of Public Health, Faculty of Health, Lorestan University of Medical Sciences, Lorestan, Iran

خلاصه مقاله:

Background: Thermal stress may have numerous harmful effects on human health. This study aimed at investigating thermal stress in the city of Kerman, Iran. **Methods:** In this descriptive-analytical study, thermal stress was assessed from ۶ AM to ۹ PM in ۲۰۱۶ using four thermal stress indices including wet-bulb globe temperature (WBGT), environmental stress index (ESI), Humidex, heat stress index (HSI), and Required Sweat Rate (SWreq). Necessary data were collected from the meteorological organization of Kerman. Pearson's correlation coefficient and linear regression were used to examine the relationships among thermal stress indices and environmental parameters. All analyses were performed using SPSS version ۲۲. **Results:** Based on the results, the highest correlation coefficients were observed between ESI and WBGT ($r = ۰.۹۹$), Humidex and ESI ($r = ۰.۹۶$), Humidex and WBGT ($r = ۰.۹۷$) and SWreq and HSI ($r = ۰.۹۹$). On the other hand, thermal stress indices had significant relationships with environmental parameters including wind speed, air temperature, and relative humidity ($P < ۰.۰۵$). **Conclusion:** All indices had strong and significant associations with one another. WBGT, HSI, and Humidex demonstrated similar thermal sensations. Furthermore, according to the obtained values of ESI, Humidex, and WBGT, people enjoy thermal comfort in all months of the year (save for January as judged by the obtained WBGT value). Thus, the climate of this city poses no threat to people's thermal comfort.

کلمات کلیدی:

Thermal climate, Heat indices, Heat, Temperature

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