

## عنوان مقاله:

Investigating the Combined Effects of Heat and Light Color Temperature on Precision and Speed in Female Students  
in Laboratory Conditions

## محل انتشار:

مجله آرشیو علوم بهداشتی، دوره 10، شماره 4 (سال: 1400)

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## خلاصه مقاله:

**Background & Aims of the Study:** Cognitive functions, such as precision and speed, significantly affect human errors and incidents. The temperature of light color and heat can impact cognitive functions. Therefore, the present study examined the effect of heat and color temperature on the speed and precision of work in the laboratory. **Materials and Methods:** This study was conducted on 10 female students in the Laboratory of Atmospheric Medical School of Isfahan University of Medical Sciences in Isfahan City, Iran. Piron v-vibrometer and precision and target vibrometer devices were used to measure accuracy and speed. The test was held in 4 turns, each time for 1 hour. The first turn, 22°C, and color temperature 3000°K, the second turn 22°C and color temperature 6000°K, the third turn 36°C and color temperature 3000°K and the fourth turn 36°C and color temperature 6000°K, adjusted. **Results:** Based on the obtained results, precision measurement with precision and target vibrometer was significant in two cases with a color temperature of 3000 and temperatures of 22°C and 36°C ( $P < 0.05$ ); thus, with increasing temperature, the frequency of errors enhanced, and consequently the precision decreased. Furthermore, the speed measurement with the precision and target and Piron v-vibrometer in color temperature state 6000 and temperatures of 22°C and 36°C and the color temperature of 3000 and temperatures 22°C and 36°C were significant ( $P < 0.05$ ). In other words, with increasing temperature, the time of work decreased, and as a result, the speed of work increased, and in other cases, no significant relationship was observed ( $P > 0.05$ ). **Conclusion:** In general, the present study results indicated that the precision of work at 36°C is less than exposure to 22°C; the speed of work is higher, and changing the color temperature of light has no significant effect on increasing the precision of work. Therefore, it is suggested to use control strategies to reduce the temperature in environments with temperatures higher than comfort

**کلمات کلیدی:**

Heat stress, Light color temperature, Cognitive function

**لینک ثابت مقاله در پایگاه سیویلیکا:**

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