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Comparison of processing efficiency of visual search behaviors and performance according to anxiety levels in athletes

Poster Presentation

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Abstract

Introduction: High-efficient visual searchability is the key for the athletes to victory. Visual search is an important way for athletes to catch effective information on-site within a complicated environment. Visual search is a kind of complex process of cognition as well as an important method for a human being to obtain and process exterior information. Visual search can be affected by a lot of factors like personal experience, status and ability, the difficulty of the visual search task, and the physical features of the stimulant, etc. The effect of anxiety on athletes' visual search has gradually drawn the attention of scholars. Maintaining an appropriate level of anxiety during exercises and contests could ensure higher visual search efficiency and is helpful for better bringing the skills of the athletes into play. Excessive anxiety will have larger interferences on the visual search efficiency of the athletes, and the visual research efficiency will be reduced, resulting in the abnormal performance of the skill levels of the athletes. The purpose of the present study was to compare the efficiency of processing visual search behaviors and performance with regard to levels of anxiety in athletes.

Methods: Participants in this study included 40 female athletes aged 19 to 27 years. The Spielberger Trait Anxiety Inventory (1983) was used to split the subjects into two levels of anxiety (low and high). The number of fixations, fixation duration, and pupil diameter was recorded for each subject through an eye-tracking device. Darts assignment was also used to evaluate performance.

Results: The results of the independent t-test showed significant differences in fixation time, number of fixations, pupil diameter, and dart function in both groups ($p \leq 0.05$).

Conclusion: High anxiety status can interfere with athletes' visual search performance so that the efficacy of one's gaze behaviors is reduced and becomes an inefficient search strategy.

Keywords

Anxiety; Number of fixations; Duration of fixation; Pupils; Function

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