Exploring the pattern of other-race effect in autistic and typically developing children

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Background: The *other-race effect (ORE)* is a widely known observation that we can recognize own-race faces better than other-race faces (Meissner & Brigham, 2001). The face processing deficit in autism spectrum disorder (ASD) is broadly studied; however, the aspect regarding race sensitivity in autistic children's face processing is relatively unexplored. The present study aims to explore the pattern of other-race effect in children with autism spectrum disorder and typically developing (TD) match group.

Methods: 18 ASD (mean age = 7.5 yrs) and 13 TD age-matched children (mean age = 7.6 yrs) participated the study. The face stimuli contained female faces of three races (Asian, Caucasian, African) and each with four levels of difficulty: Easy (change identity), Medium (change component: replaced eyes), Hard-eye (change configuration: widen eye spacing), and Hard-mouth (change configuration: moved up mouth). The visual paired-comparison old/new face task with two-alternative-forced-choice (2AFC) procedure was adopted. There were a total of 72 trials. 5 ASD children were excluded due to their inability to complete the experiment.

Results: In the TD group, we found that the accuracy decreased and response time increased as the stimulus difficulty increased for each race. They also showed a moderate own-race advantage that the best performances (highest accuracy and lowest RT) were found in the Asian face across conditions. This finding was consistent with our previous adult studies. In the ASD group, however, we did not find an own-race advantage for the Asian faces at all. In addition, contrary to TD group, the highest error occurred in the Hard-eye condition rather than the Hard-mouth condition. The performance for the Medium condition was also significantly lower than that of the TD group, indicating a deficit in processing eye feature. In sum, our findings suggest that ASD children did not exhibit own race advantage.