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Computerized false belief tasks impact mentalizing ability in people with Williams's syndrome

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Background: People with Williams's syndrome (WS) are characterized by hyper sociability, fluency in languages, and advantageous face processing skills, leading to the proposal of a social module. Previous studies on the mentalizing abilities of people with WS using two dimensional pictures, including normal like, delayed, and deviant behaviors, have yielded mixed results. Thus, this study examined the mentalizing ability of people with WS through structured computerized animations of false belief tasks to investigate whether inferences about other people s minds can be improved in this population.

Method: Participants were shown animations containing unexpected location and content changes. After viewing each animation, participants had to answer four types of questions relating to character identification, reality, memory, and false belief. Their responses were recorded and analysed.

Results: A comprehension of false belief was observed in 4 year old Healthy children, whereas children with WS showed enhanced comprehension of false belief (until they attained a chronological age [CA] of 5.9 years), suggesting an improvement in the theory of mind resulting from viewing structured computerized animations. This age is earlier than that reported by previous studies for using theory of mind to pass false belief tests (CA 9 years), even challenging the age at which individuals failed to pass the tests (CA 17.11 years).

Conclusions: Structured computerized animations enhanced the mentalizing ability of people with WS to a certain extent. Compared to the typically developing controls, people with WS presented with a lower developmental level in processing false belief tasks. This study has educational implications for the development of computerized social skills interventions for people with WS.

Biography

Professor Ching-fen Hsu is the director of the Laboratory for Language Pathology and Developmental Neurosciences. In the lab, research topics related to language pathology, cognitive neurosciences, and developmental psychology were conducted. She carried out interdisciplinary research on language pathology and developmental neuroscience, using behavioural and neurological research methods. Her main research interests lie in cognition and language of people with neurodevelopmental disorders. The focus of her research is to compare the patterns of developmental delay in people with neurogenetic disorders and people with learning difficulties. In the hope of developing possible cognitive-intervention treatments for people with neurodevelopmental disabilities, Professor Ching-fen Hsu devotes her time and energy to research on neurodevelopmental disorders very much.