

Improving Theory of Mind in Down syndrome ? An exploratory Study

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Introduction & Objectives

Children with genetic or neurodevelopmental disorders have difficulties with ToM tasks. It is not surprising since we know that their social skills and their interpersonal relations are drastically impaired. In our pilot study, we explore the possibility of improving ToM abilities of participants with DS and typically developing children (TD) matched for non-verbal mental age. Participants were assessed with the French adaptation of the “ToM Inventory” before and after a 10-week training session.

Methods

Participants: 10 participants with DS (4 females and 6 males, 8.5 to 18.3-year-old, mean 11.5) and 10 TD participants (3 females and 7 males, 3.11 to 4.8-year-old, mean 4.0) matched for nonverbal mental age measured with the Raven’s “Coloured Progressive Matrix” (Raven, 1998) and the French version of the PPVT (EVIP, Dunn, Dunn & Theriaults-Whale, 1993).

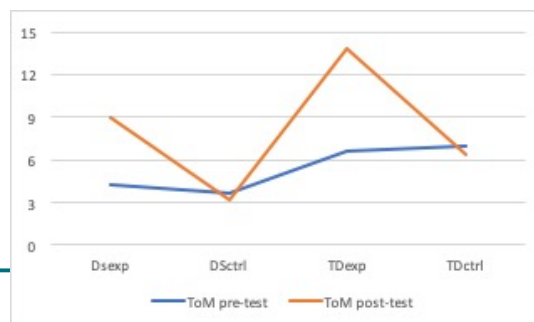
Experimental task: French adaptation of the “ToM Inventory” (Hutchins & Prelock, 2014)

Training : Shared reading – Emotion recognition and assignment – Referential communication

Results

Inter-groups comparisons : To test the training effect, we conducted independent Mann-Whitney analyses on the post-test scores both in DS and TD groups. Trained children perform significantly better in post-test than untrained children do in both DS (U 0,0, Z -2.63, $p < 0.004$) and TD (U 0,0, Z -2.63, $p < 0.008$) groups.

Intra-group comparisons : To compare the ToM training effect, we used Wilcoxon W test. Pre- and post-test results were compared for each group. Results point to an improvement in “ToM Inventory” scores after the training in both DS (W: 15.00, Z 2.032, $p < 0.021$) and TD (W: 0.00, Z 2.060, $p < 0.020$) groups.



Conclusion

The main goal of this study was to determine the possibility of improving ToM skills in DS. We chose to adapt a multimodal material that showed its effectiveness with TD children. At the end of a 10-week training session, trained participants with DS performed better on ToM tasks than their TD peers. Moreover, they also tended to perform better than the untrained TD children). Lastly, it appears that shared reading seems to be a good way to help participants to identify and understand causes/consequences of someone else’s emotions and mental states.

1. Hutchins, T.L., Prelock, P.A., & Bonazinga-Bouyea, L. (2014). *Technical Manual for the Theory of Mind Inventory and Theory of Mind Task Battery*. Unpublished copyrighted manuscript. Available at: theoryofmindinventory.com
2. Dunn, L., Dunn, L., & Theriaults-Whalen, C. (1993). *Echelle de vocabulaire en images Peabody*. Adaptation française du Peabody Picture Vocabulary Test. Toronto: ON: Psycan