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PSYC 532

Article Critique 11:Early Behavioral Intervention Is Associated With Normalized Brain Activity  
in Young Children With Autism

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I am highly interested in how neurofeedback training (NFT) affects behaviors, so I researched the association between brain activity and autism spectrum disorder.

According to the knowledge we learned in PSYC 587, Early Start Denver Model (ESDM) utilized part of the principal of Applied Behavior Analysis (ABA). Based on the previous research, the ESDM training successfully improve the IQ, language, and adaptive behavior of children with ASD (p.1150). In this article, after comparing the EEG brain activity result of the ESDM experimental group and the community intervention group, the authors found that the ESDM group showed a shorter Nc latency and increased cortical activation. The greater cortical activation is associated with improved social behavior based on previous research. The participants are in the age range of 18 to 24 months old; therefore, the paper is fundamental for the relation between brain activity and early behavioral intervention.

Additionally, the ESDM intervention group shows more considerable attention and cognitive-behavioral after training based on ADI-Reviewed, ADOS, Mullen Scale of Early Learning, Vineland Scales of Adaptive Behavior, and PDD Behavioral Inventory (BI). More specifically,

the ESDM intervention group showed increased cortical activation, “as reflected in decreased alpha power and increased theta power (p.1157).” Therefore, both brain activity and assessment showed that children who received the ESDM treatment differed significantly on behavioral outcomes from those typical developing children.

The paper is the first start and helps me thinking that if the practitioners use NFT to activate children with autism’s theta power and alpha power, will their social behavior be improved? Just like taking medicine to enable a part of neurons, but now the pill is behavioral training.

## Reference

Dawson, G., Jones, E. J., Merkle, K., Venema, K., Lowy, R., Faja, S., ... Webb, S. J. (2012). Early Behavioral Intervention Is Associated With Normalized Brain Activity in Young Children With Autism. *Journal of the American Academy of Child & Adolescent Psychiatry*, 51(11), 1150–1159. doi: 10.1016/j.jaac.2012.08.018