

2021 Gatlinburg Conference Poster Submission

Title: Parental Scaffolding of Play in Children with Developmental Disabilities: Comparing Fetal Alcohol Spectrum Disorder and Autism Spectrum Disorder

Authors: Julia T. Mattson¹, Hannah M. Mikus², Natalie H. Stagnone², John C. Thorne³, & Sara T. Kover³

Introduction: Play is considered the ‘homework’ of childhood, where successful engagement in play behaviors promotes higher levels of executive function, self-regulation, and academic outcomes in typical development (Shaheen, 2014; Slot et al., 2015; Stagnitti et al., 2000; Yogman et al., 2018). Children with developmental disabilities often require increased levels of parental scaffolding to engage in pro-social behaviors, including play (DeVeney, et al. 2016; Van keer et al., 2019; Venuti et al., 2009). Specifically, in play with children with autism spectrum disorder (ASD), parents have been found to engage in developmentally-matched or *higher* developmental play levels with their children as compared to typical peers (Freeman & Kasari, 2013).

While children with fetal alcohol spectrum disorder (FASD) experience challenges in social behaviors, including lower play quality (Molteno et al., 2010; Pearton et al., 2014), it is not known whether the level of parental play scaffolding for children with FASD differs from that for children with ASD. A better understanding of the way parents support their child’s developmental play level may help guide socially-directed interventions for these populations, particularly since improved play skills result in more positive social behaviors in ASD (Jung & Sainato, 2013). The current study investigated parental scaffolding in parent-child play in children with FASD relative to ASD, through a comparison of parent and child developmental play levels.

Method: Participants with FASD ($n=17$, 8 female) were ages 4-9 years ($M=7.0$ years; $SD=1.6$ years), diagnosed using the 4-digit code system (Astley, 2004). Participants with ASD ($n=26$, 5 female) were ages 3-11 ($M= 7.4$ years; $SD= 2.4$ years). Groups did not differ significantly in age, $p=0.51$, Cohen’s $d=0.19$. Parent-child dyads were video-recorded during an unstructured, 10-16 minute free-play session with a standardized toy set. Trained and reliable coders coded highest developmental play level achieved by parent and child separately for each minute of play (Freeman & Kasari, 2013). Assigned play levels included the following, in advancing order: (1) *indiscriminate actions* - all objects are treated alike, (2) *discriminative actions* - objects are treated differentially, (3) *takes apart combinations* - object configurations are separated, (4) *presentation combinations* - object configurations are re-created, (5) *general combinations* - non-specific object configurations are created, (6) *conventional combinations* - object characteristics are preserved in a created configuration, (7) *pretend self* - objects are related to oneself with indication of a pretend quality, (8) *child as agent* - familiar actions are extended to figures, (9) *single-scheme sequences* - a familiar action is extended to two or more figures, (10) *substitutions* - one object stands in place for another, (11) *doll as agent* - figures are moved as if they are capable of action, (12) *multischeme sequences* - different actions are extended to the same figure, and (13) *thematic and sociodramatic play* - familiar or fantasy play roles/characters are adopted. Play levels were averaged across time epochs to obtain a separate average level of play for parent and child (Freeman & Kasari, 2013).

Results: Among FASD parent-child dyads, mean parental play levels were significantly lower than child play levels (mean child = 8.6; mean parent = 7.7; $p=0.019$). In the case of ASD, mean levels of play did not differ between child and parent (mean child = 6.1; mean parent = 5.9; $p=0.33$). Children with FASD had higher play levels than the children with ASD, $p<0.001$; the parents of children with FASD likewise had higher play levels than the parents of children with ASD, $p=0.002$. The interaction between groups for differences in parent versus child levels of play was not significant, $p=0.050$. For FASD participant dyads, 18% of parents (3 out of 17) demonstrated higher developmental play levels on average than their child; for ASD participant dyads 38% (10 out of 26) demonstrated higher developmental play levels on average than their child, Fisher’s exact test, $p=0.30$.

Discussion: To our knowledge, this is the first study to investigate developmental play levels in children with FASD. Parents of children with FASD demonstrated, on average, *lower* developmental play levels compared to their children – a pattern that has not previously been reported among parent-child dyads with other developmental disorders. In contrast to that pattern, in the current study, parents of children with ASD demonstrated, on average, developmental play levels that did not differ from their children. Yet, among younger, preschool-age children with ASD, parental levels of play may exceed child play levels (Freeman & Kasari, 2013; 6.7 and 7.7 for mean child and parent level). Parental play that is developmentally matched or higher might be

2021 Gatlinburg Conference Poster Submission

considered to “scaffold” a child’s play level (Freeman & Kasari, 2013). Despite limitations of the current study (e.g., small sample sizes, lab-based rather than in-home play sessions), the extent to which parents of children with FASD scaffold their child’s play – or could be supported in scaffolding their child’s play through behavioral parent training – warrants additional investigation. The greater emphasis on play skills – and play-based behavioral interventions – for children with ASD (e.g., Solomon et al., 2014) may contribute to the between-group parental differences observed in the current study. Further research is needed regarding whether similar findings are demonstrated in play-skill-matched (rather than age-matched) FASD and ASD groups.

References:

- Astley, S.J. (2004). Diagnostic guide for fetal alcohol syndrome disorders: The 4-digit diagnostic code (3rd ed.). Seattle: FAS Diagnostic and Prevention Network, University of Washington. Retrieved from <http://fasdpn.org>.
- DeVeney, S., Cress, C.J., Lambert, M. (2016). Parental directiveness and responsivity toward young children with complex communication needs. *International Journal of Speech-Language Pathology*, 18: 53-64.
- Freeman, S., Kasari, C. (2013). Parent-child interactions in autism: characteristics of play. *Autism*, 17: 147-161.
- Jung, S., Sainato, D.M. (2013). Teaching play skills to young children with autism. *Journal of Intellectual and Developmental Disability*, 38: 74-90.
- Molteno, CD, Jacobson, SW, Colin, CR. (2010). Infant symbolic play as an early indicator of fetal alcohol-related deficit. *Infancy*, 15: 586-607.
- Pearson JL, Ramugondo E, Cloete L, Cordier R. (2014). Playfulness and prenatal alcohol exposure: a comparative study. *Australian Occupational Therapy Journal*, 61: 259-67.
- Shaheen, S. (2014). How child's play impacts executive function--related behaviors. *Applied Neuropsychology: Child*, 3: 182-7.
- Slot, P.L., Mulder, H., Verhagen, J., Leseman, P.P.M. (2015). Preschoolers’ cognitive and emotional self-regulation in pretend play: relations with executive functions and quality of play. *Infant and Child Development*, 26, 1–21.
- Solomon, R., Van Egeren, L.A., Mahoney, G., Quon Huber, M.S., Zimmerman, P. (2014). PLAY Project Home Consultation intervention program for young children with autism spectrum disorders: a randomized controlled trial. *Journal of Developmental and Behavioral Pediatrics*, 35:475-85.
- Stagnitti, K., Unsworth, C., Rodger, S. (2000). Development of an assessment to identify play behaviours that discriminate between the play of typical preschoolers and preschoolers with pre-academic problems. *The Canadian Journal of Occupational Therapy*, 67: 291-303.
- Van keer, I., Ceulemans, E., Bodner, N., Vandesande, S., Van Leeuwen, K., Maes, B. (2019). Parent-child interaction: a micro-level sequential approach in children with a significant cognitive and motor developmental delay. *Research in Developmental Disabilities*, 85: 172-186.
- Venuti, P., de Falco, S., Esposito, G., Bornstein, M.H. (2009). Mother-child play: children with Down syndrome and typical development. *American Journal on Intellectual and Developmental Disabilities*, 114: 274-88.
- Yogman, M., Garner, A., Hutchinson, J., Kirsh-Pasek, K., Michnick Golinkoff, R., Committee on psychological aspects of child and family health and council on communications and media. (2018). The Power of Play: A Pediatric Role in Enhancing Development in Young Children. *Pediatrics*, 142: e20182058.

¹Department of Pediatrics, Seattle Children’s Hospital/University of Washington School of Medicine, Seattle, WA, United States

²University of Washington, Seattle, WA

³Department of Speech & Hearing Sciences, University of Washington, Seattle, WA