Factsheet Key points:

- ‘Responding’ improves with joint attention intervention provided in the laboratory setting.
- The research evidence about joint attention intervention for ‘initiation’ is inconclusive.
- Results apply to families with some college education.

The Vermont Interdisciplinary Leadership Education for Health Professionals (ILEHP) aims to prepare leaders across the health professions to serve children with special health needs and their families.

Introduction

Joint Attention skills involve the sharing of attention with others, through pointing, showing, and coordinated looks between a person and object (Kasari, Freeman & Paparella). Joint attention skills are important because engaging others in non-verbal language (eye contact, facial expressions, and gestures) and the ability to talk are related (Kasari, Gulsard, Wong, Kwon & Locke). This topic is important to early childhood special education as recent research indicated that joint attention is a significant factor in the early development of language and social communication. Because joint attention skills develop prior to verbal language it is seen as one of the early potential indicators of an autism spectrum disorder in very young children (Whalen & Schreibman).

Clinical question: In young children with autism spectrum disorder does joint attention intervention lead to increased spontaneous responding to an adult?

The literature reviewed

A literature review was conducted using the following database, PubMed, CINAHL, PsycINFO, and ComDisDome in the fall of 2010. Only studies published in peer reviewed journals were considered for selection. Keywords used to conduct the database search included, autism spectrum disorder, joint attention, intervention, responding, play, language development and treatment. Initial searches resulted in 42 articles from the PubMed database. The search was narrowed to a result of 25 from which the three articles were selected. Key factors for selecting the article included – quantitative research methods, primary focus of study was on joint attention skills with children who had an autism spectrum diagnosis, intervention was conducted by an adult (professional or parent), and did not include peers. Due to the relatively new focus on joint attention as a targeted intervention for young children with autism spectrum diagnosis the number of studies to review were limited.
The purpose of the study was to determine if joint attention skills, (and symbolic play) could be taught to young children with autism. The study was a randomized controlled study of 58 children in three groups – one group who received joint attention treatment, a second randomized group who received symbolic play instruction and a third control group who did not receive either treatment. The study was conducted with “blinded” interventionist and independent evaluators. The researchers independently confirmed the diagnosis of autism using the ADOS and ADI-R. The authors included a detailed description of the intervention allowing the study to be reproduced. The control group received the same number of hours of intervention but no treatments addressing joint attention or symbolic play. The researchers used the Early Social Communication Scales (ESCS), Structured Play Assessment and coded behaviors from 15-minute videos on mother-child interactions to measure outcomes. The ESCS is a reliable and valid tool. According to the authors statistical analysis the focused joint attention intervention resulted in a larger effect size for joint attention, responding and showing. By calculating the Minimal Importance Difference (MID) for joint attention – responding, the results showed the treatment resulted in joint attention responding that was of clinical importance for the group receiving the joint attention intervention. Children in the joint attention group made greater gains than the control group. The study demonstrated that targeted joint attention intervention can positively effect skills related to responding with young children. Though well designed, the study had a slightly smaller sample size than recommended for a study measuring two outcomes. A larger sample size might have resulted in the study being identified as having statistically significant results on more outcomes.

The study’s primary objective was to determine if providing young children with autism short term intervention on joint engagement, joint attention skills (responding and/or initiation), and play skills (functional and/or symbolic) implemented by caregivers, resulted in skill gains. The secondary goal was to determine whether the parent’s level of adherence with carrying out the intervention and amount of other services and interventions predicted treatment outcomes. The study also looked at maintenance of these skills after 1 year. This study was a randomized controlled trial (RCT). It included 38 children with an autism diagnosis confirmed independently using the DSM-IV criteria and the ADI-R. The children were placed in two randomized groups: intervention and wait-list control. Reviewers’ blind to group assignment and point in time (i.e. pre, post, follow up) coded videotape sessions for percentage of time in engagement, joint attention and type of play (i.e. functional or symbolic). The intervention was individualized based on each child’s developmental readiness to learn joint attention skills. The authors included a detailed description of the intervention allowing the study to be reproduced. Although this study reported on multiple outcomes, I have only included results related to the clinical question – joint attention and responding. The study resulted in positive outcomes for the intervention group related to gains with joint attention – responding. Calculating MID, the study results demonstrated a clinical significance related to joint attention – responding. The study was limited in terms of generalization of the results because parents in the study had greater education than the general population.
The purpose of this study was to assess the efficacy of joint attention intervention using naturalistic behavior modification techniques on improving responding to an adult and initiation. The study was a single subject (n=11), multiple baseline study (ABA with A = no intervention, B = intervention). Five children had autism or PDD-NOS confirmed by a physician and/or psychologist using the DSM-IV criteria. Six children that were typically developing were included to establish developmental norms to ensure that the children with ASD were not under or over trained on the targeted behaviors. Only one of the measurement tools, the ESCS, had adequate psychometric properties. The authors reported that the intervention resulted in demonstration of clinical importance related to joint attention, responding. The MID for this outcome determined there was a difference large enough to be considered clinically important. The single subject study established trends over time related to each individual child but provided limited ability to generalize the knowledge. There were several important limitations that effect the quality of this study and interpretability or applicability of the results. There were few participants for whom very limited information about characteristics were included. Joint attention training was conducted in a laboratory setting. Results were reported graphically as statistical analysis was not possible on such a small sample size. The quality of outcome measures was questionable.

**Take Home Message**

**Summary:** Joint attention is an early red flag and a core deficit for young children with autism spectrum disorder. An early focus on joint attention can lay the foundation for more complex language, social communication and play skills. The studies demonstrated that an adult can teach children with ASD joint attention skills. The studies also demonstrated that intense and targeted treatment focused on joint attention skills/behaviors can be taught and led to improved skills for joint attention in terms of responding. The skills related to initiating joint attention, are more challenging for young children with ASD. This may be due to the more intrinsic nature of initiating where joint attention responding is often motivated by external rewards and often easier for children with ASD.

**Caveats:** Two of the studies (Kasari, et al, 2006; Kasari et al, 2010) have stronger design although a few caveats may impact their applicability. The studies results were all potentially negatively impacted by small sample size, which could have resulted in clinically important differences being missed. The results of the Kasari and colleagues’ (2010) study may not generalize beyond families whose parents have some college experience. The intervention setting for these studies was a laboratory setting. Practitioners in the field need to consider the impact on the intervention if they are going to implement this in a child’s home (distractions, space, parents availability, etc). The third study by Whalen & Schreibman (2003) was much weaker methodologically thus its results should be considered with caution.

**Implications for practice:** These studies suggest that young children with autism spectrum disorder can be taught the joint attention skill of responding. The Kasari, et al, 2010, did not look at the difference between professional led treatment and parent-mediated treatment. If parent-mediated intervention is as effective it could have a great impact on treatment cost and providing treatment early in a young child’s life. The positive outcomes related to joint attention responding accorded within a short time period (5-8 weeks). This maybe be an element families and teams may want to consider in their intervention selections. The Kasari, et al, 2010, study was well designed but it had some limitations including smallish sample size which may limit the ability of the study to identify statistical differences between groups if it was truly present.