

Research Evidence re: Developmental-Relationship Based Interventions for Autism

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July 2017

Treatments for children with autism spectrum disorders (ASD) are generally grouped in broad categories of ‘behavioral’ or ‘developmental.’ The Agency for Healthcare Research and Quality (AHRQ) define behavioral interventions “to include early intensive behavioral and developmental interventions, social skills interventions, play-focused approaches, interventions targeting symptoms commonly associated with ASD and other general psychosocial approaches.” (AHRQ, 2014) ‘Behavioral’ approaches, primarily based on Applied Behavioral Analysis (ABA), consider environmental influences on observable behaviors, and promote or discourage specific targeted behaviors through the manipulation of antecedents and consequences. (Lovaas, 1989; Cooper, Heron & Heward, 2007). In contrast, developmental approaches focus on the relationship between child and caregiver, and address functional capacities of the child. Developmental interventions build on a child’s sense of pleasure inherent in shared affective experiences to increase the spontaneous flow of affective communication and achieve increasingly more complex levels of interaction. (Sameroff, 2010; Fogel, 1993; Greenspan & Weider, 1997; 2005; Prizant 1998). Developmental-Relationship Based Interventions (DRBI), refers to those interventions which are primarily or wholly developmental in nature.

Reviews of Research

The National Standards Project (NSP) groups interventions into treatment categories. The challenge in creating these categories and their labels is significant. (National Autism Center,

2009, p. 29). In the NSP, strength of evidence is based in part on the quantity of research articles in each category, so that the groupings of interventions become a critical factor in the final rating. The NSP Phase 1 (2009), which reviewed articles through 2007, has a category of intervention called, “Developmental Relationship based treatment (DRBT).” Seven articles are included in the DRBT group and are rated as “emerging.” However, there is also a category of “Social-communication intervention” ranked as emerging, in which 2 studies (Salt, 2002 and Aldred 2004) could easily be considered DRBT. With different groupings, there would likely be different ratings.

The IMPAQ report for the Centers for Medicare and Medicaid Services (Young, 2010) reviewed articles through 2008. It adopted the same categories as the NSP phase 1 and included 6 studies in the “Developmental Relationship Based Treatment” category, with the conclusion that this treatment was again ranked as “emerging.” There are 4 articles in the “Social communication” category, including those with a developmental orientation, which is then ranked as ‘evidence-based.’

A review of evidence-based practice for autism, was reported by Wong, Odom et al (2015) which extended an earlier study (Odom et al, 2010b) to include research from 1990 through 2011. This review distinguishes between comprehensive treatment models and focused intervention practices, with the review covering only the latter. The categories used were similar to the NSP groupings, but did not include “Developmental relationship based treatment” or ‘Social-communication.’ Some DRBI were considered to be comprehensive treatment models and were therefore not included (Odom, March 16, 2016, email communication). The review included the additional category “Parent implemented interventions” which included both developmental and behaviorally oriented interventions, and is classified as ‘evidence-based.’

The NSP phase 2 (National Autism Center, 2015) extended the initial NSP report to include studies up to 2012. The challenge with creating groupings of interventions was again acknowledged NSP 2 pg. 31-33 (NAC, 2015). DRBT and social-communication were again ranked as ‘emerging.’ The NSP phase 2 also created a new category of “Parent Training Package,” classified as an ‘established treatment.’ Since DRBI typically involve parents there may be overlap between parent training and DRBT, however the articles included in each category are not stated. A new category explicitly for DIR/Floortime was created, which was classified as “unestablished.” Since quantity of research is a major determinant in rating of evidence, narrowly defined intervention classifications such as this would likely have fewer articles and therefore a lower rating.

A review by Smith and Iadarola, 2015, includes articles through February 2014. It overcomes the challenge of weighing evidence using such groupings, by categorizing interventions into the larger ‘treatment families’ of ABA, developmental social-pragmatic (DSP), or both. In their review, “Developmental, social pragmatic interventions” done by parents were rated as ‘probably efficacious,’ and when done by teachers as ‘possibly efficacious.’

In 2015, Mercer published a review specifically about DIR/Floortime as a treatment for children with ASD in the field of social work. She noted that, “DIR is one of a number of Developmental Social Pragmatic (DSP) treatments for ASD.” She examines if DIR/Floortime is a plausible treatment and concludes: “..the foundations of DIR/Floortime are plausible, both logical and congruent with established thinking about early development.” In evaluating the effectiveness of DIR/Floortime, she states, “..it is possible that even the relatively weak evidence for DIR could form part of EBP [evidence based practice.] She also states, “DIR/Floortime does not have the status of an evidence-based treatment.” And “Given the general factors that

DIR/Floortime shares with other child psychotherapies, however, it is probably as effective a treatment for ASD as other DSP treatments.”

Since the 2015 Smith and Mercer reviews, seven additional studies of DRBI have been added to the literature.

One of the tenets of DRBI is that intervention is child-led, following the child’s interests. Dunst et.al. (2012) reported a meta-analysis of 24 studies regarding the impact of incorporating the child’s interests into intervention. They conclude, “...interest-based intervention practices were effective in terms of increasing prosocial and decreasing aberrant child behavior.”

Research citations

The following are relevant randomized control trials that provide evidence of the effectiveness of developmental-relationship based interventions for children with autism:

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| Green et al. (2010) A randomized controlled trial with 152 children and Pickles (2016) |
| Casenhiser et al. (2013) Casenhiser et al. (2014) A randomized controlled trial with 51 children |
| Siller et al. (2013) (2014) A randomized, clinical trial with 70 children |
| Solomon et al. (2014) A randomized controlled trial with 128 children |
| Wetherby et al. (2014) A randomized controlled trial with 82 children |
| Rahman et al. (2016) A randomized controlled trial with 65 children |

The following are research studies of developmental-relationship based interventions which show positive impact of these interventions from 1986-2015:

Rogers et al. (1986) Rogers and Lewis (1989)
Rogers and DiLalla (1991)
Greenspan and Wieder (1997) Greenspan and Wieder (2005)
Salt et.al. (2002)
Mahoney and Perales (2003)
Aldred et al. (2004)
Ingersoll et al. (2005)
Mahoney and Perales (2005)
McConachie et al. (2005)
Wetherby and Woods (2006)
Girolametto et.al. (2007)
Schertz and Odom (2007)
Solomon et.al. (2007)
Elder et al. (2010)
Pajareya and Nopmaneejumruslers (2011) Pajareya et. al. (2012)
Liao et.al. (2014)
Di Renzo et al. (2015)

Outcomes

Outcome measures in developmental relationship-based interventions examine the caregiver's sensitivity and ability to perceive and infer the child's intent by observing the child's gestural and/or verbal cues; the caregiver's skill in following, pacing and responding to the child's intent; and the extent to which caregivers are effective in establishing reciprocal social

exchanges, expanding on the child's idea, and supporting the child's initiation and shared problem solving.

The outcomes of these studies, using valid and reliable measures document that DRBI consistently improve caregiver sensitivity, responsivity, and effectiveness leading to the improved social relationships and functional development including improvement in joint attention, initiation, language, play skills, social interactions and functional development.

Implications for policy and practice

DRBI represent a treatment approach with common philosophy, goals, and strategies. They do not carry a single label such as "ABA" but rather are performed with a variety of different programs throughout the world. Because developmental-relationship based interventions are comprehensive and address overlapping areas of relating, communicating and thinking, the studies are scattered amongst categories in reviews of research. Results may be variously reported in categories of developmental interventions, social-communication, social-pragmatic, or parent-mediated interventions.

An unfortunate consequence of the confusion about terminology is that children and families may not be able to access the treatment approach that is best suited to their particular child and family. While there is agreement that children with ASD present a wide range of unique abilities and challenges, and that no particular treatment approach is effective for all children (National Autism Center, 2015), public policies often limit access to treatment options. It is important that clinicians as well as families are able to make informed decisions based upon knowledge of treatment options and access to all evidence-based treatment modalities.

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