Factsheet Key points:
- Parent training may positively impact the language development of children with ASD.
- It appears time- and cost-effective
- There are many parent-training programs. More research comparing parent-training protocols is needed.

Introduction

It is well established that children with Autism Spectrum Disorder (ASD) experience challenges in language, communication and social interaction (American Psychiatric Association, 2000; Macintosh & Dissanayake, 2006). Research has demonstrated that early social communication skills are associated with language outcomes later in life. (Bono, Daley & Sigman, 2004; Dawson, Toth, Abbott, Osterling, Munson, Estes, et al. 2004; Mundy, Sigman, & Kasari, 1990; Toth, Munson, Meltzoff & Dawson, 2006). Therefore, it makes sense that social communication skills would be the focus of early intervention programs. Parent training has been shown to be a cost-effective treatment technique for teaching parents to facilitate child learning (Forehand & McMahon 1981; Patterson, 1982). Parents can be essential to a child’s progress in an early intervention program as they represent the most proximal and powerful environmental influence during a child’s early years (Bruner, 1981; Whalen, Schreibman & Ingersoll, 2006). Thus, training parents to facilitate the language development of their young child with ASD could be a cost efficient way to improve the child’s outcome.

Clinical Question: Does parent training in communication strategies (e.g. communication temptations, expectant waiting, verbal imitation prompting) improve the language development of children with ASD?

The literature reviewed

A literature review was conducted using the PubMed and CINAHL databases with the keywords ‘Autism Spectrum Disorder’, ‘communication’, ‘parent training’, and ‘intervention’. These searches yielded approximately 15 articles each. Many were duplicates. Only studies published in peer reviewed journals were considered for inclusion in this factsheet. Articles related to modifying child behavior using parent intervention were excluded. The following 3 articles were selected for review.
The dual objectives of this single-subject design study with multiple-baselines (n=18) were to determine the effects of an in-home training program of fathers on their acquisition of animated imitation and expectant waiting skills and to determine if their children with ASD demonstrated gains in pre-communication skills following their fathers’ training. The father-child dyads in this study were recruited through the Centers for Autism and Related Disabilities or a community family health practice. Eligibility criteria included a child diagnosis of ASD based on DSM-IV criteria, as well as CARS and ADI-R scores, and residence within 150 miles of the University of Florida. Participating families’ backgrounds were well-described including children’s age (2 to 7 year old), fathers’ age (24 to 49 years), races and socio-economic status. The study included a detailed description of the intervention (e.g. animated imitation and expectant waiting strategies) allowing the study to be reproduced clinically. The study measured changes in the frequencies of animated imitation used by fathers, expectant waiting used by fathers, father initiation with child, father responding to child, child initiation with father, child responding to father and child vocalizations through video transcript analysis. Analysis of changes over time with one typical father-child dyad was provided in the article as an example. Authors also performed repeated-measures ANOVA to estimate the statistical significance of changes in behaviors (e.g. parent initiating/responding and child initiating/responding from baseline to introduction of animated imitation strategy and baseline to introduction of expectant waiting strategy). The authors did not discuss power or sample size estimation thus the interpretation of ‘not statistically significant’ findings is difficult, as it could reflect not having sufficient subjects to detect a change (Type II error).

The study found that fathers demonstrated a statistically significant increase in the use of the animated imitation strategy, and a statistically significant increase in responding to his child. Children showed a statistically significant increase in initiation with their fathers. Trends shown through visual analysis demonstrated an increase in animated imitation and responding by fathers across intervention conditions. Child initiations increased across conditions. By looking at the clinically minimal important difference (MID) for child vocalization it was found that this behavior did in fact increase over time and across conditions suggesting that with more subjects a statistically significant difference might have been found.

The results of this study suggest that fathers are capable of learning and implementing strategies aimed at increasing early communication skills in their children with ASD. It also demonstrated an increase in children’s communicative initiations with their fathers. This is a surprising outcome since this is a skill noted to be of particular challenge to children with ASD. It may be a reflection of how initiation was defined in the study.

Due to the small convenient sample, the possible presence of concurrent treatments, the lack of information about maternal training and their possible presence during intervention and the use of an ANOVA on a relatively small sample, the results warrant replication with a larger more rigorous research design.
The purpose of this study was to determine whether in-home father training is efficacious on increasing fathers’ specific social reciprocity skills. The study also investigated whether fathers and mothers differ in their learning of social reciprocity and whether children with ASD demonstrated gains in verbal communication after their parents underwent the training. This study is a secondary analysis of a single-case design study for which data was collected by the third author and published in three precedent articles (Elder, Valcante, Yarandi, Groce & Carlton, 2002, Elder, Valcante, Wond & Zylis, 2003, Elder, Valcante, Yarandi, Groce & Carlton, 2005).

Of the original sample of 18 families, 8 families (6 boys, 2 girls with ASD) responded to a request to review video of intervention sessions from the previous study. Family characteristics, recruitment method and inclusion criteria were included in the previous article review (i.e., Article 1). The study analyzed the ratio of total utterances used by parents and children in their play as well as the increase in verbal communication of children with ASD over the course of a baseline session, 1, 3 and 6-month follow-up sessions. Coded transcripts of videotapes were used to determine outcomes with an inter-rater reliability standard of 93% established.

Results demonstrated the ratio between parental utterances and child’s utterances decreased significantly following intervention indicating that parents spoke less. In addition, the ratio based on play partner interaction effect was not significant indicating there was no difference between fathers and mothers in learning skills designed to promote social reciprocity. However, sample size was so small that ‘not statistically significant’ findings may reflect the fact that they did not have sufficient subjects to detect a change (Type II error). Finally, the number of single word utterances increased significantly following intervention and the number of different words used increased significantly following intervention.

Authors concluded that parent training of social reciprocity skills (i.e., expectant waiting and imitation with animation) was efficacious. The authors shared that the reduction in adult talk during play with child with ASD shows that parents learned the 2 trained skills (expectant waiting and verbal imitation). Parent training, regardless of whether it is with the mother or father, could be a beneficial supplemental intervention to support the increase in verbal communication by children with ASD.

The study results’ interpretation is hindered by the study’s important limitations, which included its small sample size (n=8), which rendered statistical analysis interpretation of ‘non-significant’ results impossible. Also because of the small sample size, generalization to the larger population of families with individuals with ASD should be done cautiously. Co-intervention was not described or controlled for. Thus, it cannot be stated that this parent training was solely responsible for the improvements in child language development. The study included a potential sampling bias. Families who accepted to participate in this secondary analysis may have differed from the other families. For example, they may have had a better experience in the study, may have been more motivated, or may have expected that they did well.

The purpose of this partially-randomized control trial study (n=75) was to evaluate the effect of a 12-month non-intensive parent training program called Focus Parent Training, on child language development and clinical global improvement as well as engagement of parent in trained skills. Half of the sample was randomized and the other half was assigned by geographical area to avoid the risk of contamination. Some evaluators were blind to group assignment. The study compared the intervention group, which received non-intensive parent training plus ‘care-as-usual’ to the control group. ‘Care as usual’ was defined as participation in either special daycare centers or medical nurseries, which provide on an individualized basis speech and language therapy, motor therapy, music therapy and play therapy. Non-intensive parent training in the following skills, providing a supportive presence, respecting a child's autonomy, providing effective structure and limits, and providing quality instruction to the child ranged in intensity from 1 hour per month to 90 minutes twice week with a psychologist.

Participants were recruited from a child and adolescent psychiatry university center in the Netherlands where they were referred due to possible diagnosis of ASD. Children’s diagnoses were made following current best practice guidelines. Inclusion criteria for children to participate in the study were based on age, diagnosis (i.e., ASD or PDD-NOS) and developmental level (i.e., developmental age of at least 12 months and if PDD-NOS developmental quotient below 80). The article provided some description of the sample characteristics. The children with ASD appeared to be all male and ranged in age between 12 and 42 months. The study did not specify how many fathers and mothers were involved, just the total number of parents (n=75).

Language development outcomes were measured using The MacArthur Communicative Development Inventory (Dutch version) (M-CDI). General improvement in development was measured using The Clinical Global Impression-Improvement scale. Engagement (i.e., compliance, negativity, avoidance; each operationally defined) was measured using 3 different Erickson 7-point rating scales based on videotaped parent-child interaction episodes. Early precursors to social communication were measured using M-CDI and ADOS. Parental skills (i.e., supportive presence, respect for child’s autonomy, effective structure and limit setting, quality of instructions) were measured using the same 7-point Erickson scale as was used for engagement.

Most results yielded statistically insignificant results, which caused the authors to conclude that Focus Parent Training in the context of Dutch community care did not show added value over broadly focused care-as-usual alone. The overall findings suggest that Focus Parent Training was no more effective an intervention for young Dutch children than care-as-usual in the Netherlands. The authors use of sensitive measures with attention to adequate validity and reliability strengthen the value of their results when compared with the study, Drew et al., 2002, which they attempted to replicate. However, their extensive use of statistical analysis may have neglected some more subtle differences between groups that could still be clinically significant and the authors actually suggest using an etiologic analysis approach based on videotaped behavior in the future to look at such differences.
Summary:

Given the increase in early diagnoses of children with ASD, the need to find more effective ways to target the core challenges (i.e., difficulties with communication and social skills) is highly warranted. Training parents of children with ASD in effective ways to improve their children’s language development and social interaction skills would be a time- and cost-effective method to ensure intensive early treatment. These studies’ results show enough promise in parent training that it should continue as an intervention strategy and focus for further study. It was demonstrated that training mothers and/or fathers was equally efficacious. Child initiation of interaction with a parent increased significantly in one study, suggesting that training could help parents know how to improve this core deficit skill found in children with ASD. Although parent training within the context of a rigorous early intervention program as characteristic in the Netherlands did not reveal large statistically significant effects, this research suggests that further study of the clinical impact of such combinations of intensive early intervention and parent involvement is critical.

Caveats:

The studies’ primary limitation as a group is the small sample sizes, which affected the ability to detect change or difference statistically if an important change was present. In addition, the samples of convenience used in the studies affect the ability to generalize the results, as it is unclear whether participating families represent the broader population. The design of the Elder study (articles 1 and 2) did not fully control for the potential benefits of co-interventions that a child might have received at the same time. This is further illustrated by the study conducted by Oosterling and colleagues (2010) who found that parent training did not have additional benefits over usual intervention for children with ASD.

An additional caveat in grouping these three studies for comparison relates to the diversity of skills taught to parents making it difficult to compare parent training approaches or draw overarching conclusions about parent trainings. The studies reviewed here addressed some of the same type skills, but it was very challenging to determine whether the strategies used were similar.

Implications for Practice:

The results of these research studies suggest that parent training may be a beneficial part of a young child with ASD’s intervention program. The use of parent training could also have a cost- and time-saving effect on the implementation of early intervention programs with children with ASD. It is also important to acknowledge the potential stress on parental well-being that parent training could possibly produce if not implemented as a balanced component of a child’s intervention program.
Reference: