Training parents to implement communication interventions for children with autism spectrum disorders (ASD): a systematic review

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CRD summary
This review found that procedures for training parents to implement communication interventions for children with autism spectrum disorders improved parent skills and child communication. It was unclear which procedure was most effective for parent training. Limitations in the review included a lack of controlled evidence, small sample sizes and failure to assess study validity. The authors' conclusions require cautious interpretation.

Authors' objectives
To assess the effectiveness of procedures for training parents to implement communication interventions for children with autism spectrum disorders (ASD).

Searching
ERIC, MEDLINE and PsycINFO were searched from 1988 to July 2009. Search terms were reported. A second search of these databases was conducted seeking additional studies by the authors of eligible studies retrieved. Reference lists of eligible studies were checked and the journals in which they were published were searched from January to July 2009. The search was limited to studies published in English in peer-reviewed journals.

Study selection
Studies of procedures for training parents to implement interventions for improving communication in children with ASD were eligible for inclusion. Studies were required to include at least one child with ASD and to measure parent knowledge or skill before and after training.

Most children in the included studies were diagnosed with autism. Where gender was reported, 43% of parents were mothers and 40% were fathers; nearly all children were boys. The children's age ranged from nine months to 10 years and their communication ability ranged from no functional speech to short complete sentences. The studies included five different communication interventions, all with multiple components and many of which were similar. Interventions were taught by highly trained therapists in a university and/or home setting using verbal or written instruction, practice, role-playing, modelling and/or reviewing videos of the intervention in practice. Mean duration of parent training was 17 hours. Outcomes reported in the review were parent ability to implement the intervention, parent satisfaction and child communication (such as spontaneous vocalisation, imitation, attentiveness). Outcomes were measured post-training and in different settings and (in most cases) at longer term follow-up (one to 12 months later).

All four authors independently selected the studies. Disagreements were resolved by consensus.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Where possible, data were extracted or calculated on the percentage of non-overlapping data (PND) for each outcome (the percentage of values observed during treatment that exceeded the highest baseline value). Where PND was not calculable, descriptive data were reported.

Two reviewers independently extracted data. Disagreements were resolved by consensus.

Methods of synthesis
Studies were combined in a narrative synthesis organised by outcomes.
**Results of the review**

Eleven studies were included. Participants were 60 parents (range one to 18) and 58 children (range one to 18).

In all 11 studies, parents were able to implement interventions more accurately after training (mean PND 43% to 100%). The effects continued over follow-up in six of seven studies. Parents were able to implement the intervention accurately in different settings (six studies). In all 11 studies some aspect of child communication improved following the intervention (mean PND 42% to 92%). Parents were highly satisfied with results (six studies).

**Authors’ conclusions**

Procedures for training parents to implement communications interventions for children with ASD improved both parent skills and child communication. It was unclear which procedure was most effective for parent training.

**CRD commentary**

The objectives and inclusion criteria of the review were clear. Relevant sources were searched for studies. The restriction to studies published in English in peer-reviewed journals meant that the review was at risk of publication and language biases; potential for such bias was not discussed in the review. Steps were taken to minimise the risk of reviewer bias and error by having more than one reviewer independently select studies and extract data. It did not appear that study validity was assessed, which made it difficult to determine the reliability of study findings. There were substantial differences between studies (for example in sample size, participant age, training duration, outcomes measured and findings) and this raised questions as to whether the studies were sufficiently similar to pool. It was difficult to interpret the statistical or clinical significance of study findings as the effect measure used (PND) did not quantify the extent of reported improvement. As the studies were uncontrolled, there was no evidence that the outcomes were related to the interventions. As the authors noted, there were few studies and sample sizes were very small.

Limitations in the review, which included a lack of controlled evidence, small sample sizes and failure to assess study validity, the authors’ conclusions require cautious interpretation.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that more research was required to measure the effectiveness of procedures for training parents to implement communications interventions for children with autism spectrum disorders. Studies should collect both baseline and post-training data, describe parents in detail (including cultural and socio-economic variables) and aim to identify the individual effects of specific components of training.

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