Systematic review of early intensive behavioral interventions for children with autism

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CRD summary
This review concluded that there was strong evidence that early intensive behavioural interventions were effective for some but not all children with autism spectrum disorders. There was wide variability in response to treatment. Poor reporting of the review process, lack of validity assessment and possible inappropriate pooling of included studies indicated that these conclusions should be interpreted with caution.

Authors' objectives
To evaluate the effectiveness of early intensive behavioural interventions (EIBI) for young children with autism.

Searching
MEDLINE, EMBASE, The Cochrane Library, PsycINFO, CINAHL and ERIC were searched between 1985 and May 2007. Search terms were reported. United Kingdom National Autistic Society Research Autism website and seven international reviews were searched. Reference lists of reviews of autism were searched.

Study selection
Case controlled comparison studies of a home-based UCLA-affiliated programme (or programme largely based on the UCLA model) of EIBI in children with autism were eligible for inclusion. For inclusion studies had to have a minimum of 10 participants in the EIBI group, participants had to be less than six years old at the start of treatment, the intervention had to be a minimum of 12 hours per week and of at least 12 months duration and adequate data on IQ or other standard measures had to be available. Studies with a focus on specific behaviours were excluded.

Most of the included studies were conducted in USA. Participant age ranged from 30 months to 66 months. Included participants were diagnosed with autism, autism spectrum disorder or pervasive developmental disorder. IQs ranged from 50 to more than 80 (except in one study of children with intellectual impairments). Diagnostic measures varied; most studies used clinical judgements based on Diagnostic and Statistical Manual of Mental Disorders/International Classification of Diseases Criteria or Autism Diagnostic Interview-Revised (ADI-R). Most of the studies followed the UCLA Young Autism behavioural program and the comparators varied. Outcomes measured included IQ, Vineland Adaptive Behaviour Scales (VABS) and language skills (how these were measured varied between studies). Follow-up varied.

The authors did not state how the papers were selected for the review.

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

Data extraction
The authors did not state how data were extracted for the review.

Methods of synthesis
Studies were combined in a narrative synthesis and individual study details were presented in tables. Cohen’s d statistic was calculated as a simple estimate of the effect size of EIBI versus comparison for IQ. Standard scores were calculated for VABS score, expression and comprehension. The Mann-Whitney Z test was used to calculate the group change score difference.

Results of the review
Eleven studies were included in the review (n unclear). Two randomised controlled trials (RCTs) were included.

EIBI was associated with a significant improvement in IQ (11 studies) (Mann Whitney Z score -2.27, p<0.05) and VABS (Mann Whitney Z score -2.58, p<0.01) compared with comparator. There was no significant difference in
expression or comprehension with EIBI compared with comparator. Considerable variation in outcome between individuals was reported.

In studies that reported IQ changes at different time points, change scores were generally smaller at first and subsequent follow-up compared with at base line and follow-up (four studies).

Predictors of outcome were reported.

Authors' conclusions
There was strong evidence that EIBI was effective for some but not all children with autism spectrum disorders. There was wide variability in response to treatment.

CRD commentary
The review question was supported by inclusion criteria for study design, intervention participants and outcomes. Several relevant databases were searched. It was not reported whether language restrictions were applied and so it was not known whether language bias was possible. The authors did not appear to search for unpublished studies, which increased the possibility of publication bias. Validity of included studies was not assessed, so the reliability of these studies and their results was unknown. The authors did not report how the review process was conducted, so any steps taken to reduce reviewer bias and error were not known. Statistical synthesis of some outcomes may not have been appropriate, given the heterogeneity of included studies. Pooling of studies was not weighted and the effect size of individual studies was not taken into consideration; therefore, the pooled results may not be reliable. Some primary studies did not report information that was important for interpretation of results. Given the poor reporting of the review process, lack of validity assessment and possible inappropriate pooling of the included studies, the authors' conclusions should be interpreted with caution.

Implications of the review for practice and research
Practice: The authors stated that although behavioural approaches were an important element of any comprehensive program, other elements that focused more specifically on social development and communication would also be required for optimal effectiveness.

Research: The authors stated that RCTs and case-control comparison studies with adequate sample sizes to explore individual variables associated with outcomes were needed. A number of minimum requirements should also be met:

1. Baseline data should be collected immediately prior to or at the beginning of the intervention program.
2. The age of children at start of treatment, duration and intensity of treatment (hours per week) and exact time to follow-up should be made explicit.
3. The same data should be available for children in the comparison conditions, well-described to allow readers to assess the quality of the intervention.
4. Data on child variables should be better standardised and standard scores, age equivalent scores and raw scores should be reported for all assessments.
5. Diagnostic status should be clearly defined using ADI-R 6. Measures of family functioning needed to be included.

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Not stated.

Bibliographic details

PubMedID
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.