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RESEARCH AUTISM
Research Report

Outcome of early intervention for autism

Introduction

This research by a team from the University of Southampton assessed the effect of early intensive behavioural intervention (EIBI) for autism. EIBI is a comprehensive form of intervention, in which pre-school children are taught a wide range of skills by a specially trained group of teachers, normally including the parents of the children. The teaching methods are based on Applied Behaviour Analysis (ABA), a scientifically validated approach derived from psychological learning theory. The two year intervention took place in the homes of children with autism in various locations in Southern England. It examined how EIBI affected their skills and abilities and, just as importantly, how their parents fared. The study was uniquely designed as a tough test of whether EIBI for children with autism is beneficial in routine use in the UK when compared with standard pre-school provision.

Key Findings

- This study shows that EIBI was effective in a UK setting, even though it was delivered in less than the ideal conditions reported from some of the previous tightly controlled studies.
- EIBI led to significant, positive changes amongst the children with autism, including gains in intelligence, language and daily living skills, as well as in motor and social skills.
- These positive changes in children were achieved without negative impact on the psychological wellbeing of their parents.
- EIBI tended to be more effective with children with higher initial IQ and mental age, as well as better communication and social skills.
- EIBI did not lead to major reductions in the diagnostic symptoms of autism or in problem behaviours.
- Further research is required to identify factors that best predict the effectiveness of the intervention, factors that increase its impact, and factors that ensure its benefits are maintained in the longer term.

Conclusion

- EIBI can be an effective and practical intervention for pre-school children with autism in the UK
- EIBI can lead to a number of significant improvements in children's capacities without negatively affecting the psychological wellbeing of their parents
- Further research is essential to identify the factors that best predict the effectiveness of EIBI and that maximize its long term impact.

Background

The term autism describes a neuro-developmental condition, usually present from early childhood and persisting through life, which is associated with difficulties in social functioning, communication and behaviour. Many children with autism also have a significant intellectual disability.

EIBI is an intensive form of treatment, in which pre-school children are taught a range of skills, normally in their own homes, by a specially trained group of teachers, often including the parents of the children. Teaching methods are based on Applied Behaviour Analysis (ABA), a scientifically validated approach derived from psychological learning theory.

Although several studies have shown that EIBI can be effective in remediating the deficits associated with autism when compared with less intensive interventions or standard intervention and support, none to date has been published that is based on a UK sample.

Current study

The purpose of the current study was designed to answer three key questions not answered by previous research.

Can EIBI be delivered successfully in the UK context, with a positive effect on the cognitive, language and adaptive behaviour deficits typically associated with autism?

Beyond this, does EIBI reduce the symptomatic, diagnostic symptoms of autism – such as social and communication problems?

Does home-based EIBI increase family pressures, resulting in an adverse effect on parents?

In addition, the study adopted a more precise approach for establishing whether individual children benefited meaningfully from the intervention.

Methods

Two groups of pre-school children with a diagnosis of autism were identified. The first group of 23 children received EIBI over a two year period. The second group of 21 children received their local education authorities' standard provision for children with autistic spectrum disorders over the same period. Both groups of children were assessed before the project began, one year into the project and at the end of the project – two years after it began.

Participants

At the beginning of the study, all children were diagnosed with autism, aged between 30 and 42 months, free of any other chronic or serious medical conditions, and resident in family homes.

Measures

The children were assessed using a range of standard tests chosen for their scientific robustness and in their use in other studies of similar children. The parents were assessed using a range of tests of psychological wellbeing.

Procedures

- Children in the EIBI group received one-to-one treatment in their own homes for two years for an average of 25 hours per week.
- Children in the group not receiving EIBI received their local education authorities' standard provision for children with autistic spectrum disorders. For example, all were receiving school provision after 12 months, and most additionally received some form of speech and language therapy.

- EIBI was delivered by a team of 3-5 tutors and normally also by the parents of the children. All had been trained in the use of behaviour analysis-based teaching.
- The EIBI covered all aspects of functioning, including language, cognition, play and adaptive behaviour.
- Although the EIBI was delivered by a range of service providers, each provider followed the key characteristics of EIBI, such as using structured teaching based on the principles of Applied Behaviour Analysis.

Research Design

The authors opted for a field effectiveness approach, which compared children whose parents had opted for EIBI with those whose parents had not. While this approach has some limitations, the groups were well matched. Prior to the start of the study, neither the children nor their parents in the two groups differed on any key measures.

Results

- This study shows that EIBI can work effectively in the UK, even when delivered in conditions that were more typical than those from some of the previous tightly controlled studies. In particular, the interventions in this study were delivered over a shorter period and with fewer intervention hours than typically regarded as ideal.
- Most findings from this study are comparable to other (mainly US) studies
- Relative to standard provision, the positive changes following EIBI included significant improvements in intelligence, language and daily living skills.
- EIBI also led to other significant - but less robust – improvements in motor skills, social skills, and early social communication.
- This study statistically identified reliable change for individual children, demonstrating that 26% of those receiving EIBI showed very substantial improvements in IQ and none showed equivalent regression.
- Relative to standard provision, parents involved with EIBI showed no evidence of increased psychological adjustment problems.
- EIBI tended to be more effective with children who had higher IQs and mental age, as well as better communication and social skills.
- With the exception of a small change in early social communication skills, EIBI led to few reductions in the diagnostic symptoms of autism or in problem behaviours, despite the fact that it appeared to improve parentally reported social behaviours.
- Differences between the groups receiving EIBI and standard provision were evident after 12 months and were clearly maintained over the following 12 months. However, the size of the advantage for the EIBI group of children did not appreciably increase at 24 months.
- Questions remain regarding the factors that best predict the effectiveness of the intervention, such as which children are likely to benefit most, and how to identify and evaluate effective curricula and teaching methods.
- Questions remain regarding whether the effects of EIBI will be maintained in the longer term.
- Questions remain regarding whether the techniques of EIBI can be further improved to bring about still better outcomes.

Further Information

Full study

The full study on which this research report is based is:

Remington, B., Hastings, R. P., Kovshoff, K. et al. A field effectiveness study of early intensive behavioural intervention: outcomes for children with autism and their parents after two years. American Journal on Mental Retardation. (In press).

Other studies

An evaluation of a number of other studies into the effectiveness of EIBI - and other interventions - can be found on the Research Autism website at www.reserchautism.net

Organisations

The following organisations contributed in one way or another to the study.

- SCAmP: The Southampton Early Autism Programme based at the University of Southampton which hosted the research study.
- The University of Wales Bangor, where Professor Richard Hastings was based for the later stages of the project.
- The Esmée Fairbairn Foundation. Charity that funded part of the research study and the subsequent dissemination activities.
- Health Foundation UK. Charity that funded the full outcome study.
- Research Autism. Charity that funded part of the research study and published the subsequent research report.
- LEAP, Peach and the UK Young Autism Programme. Service providers which delivered some of the interventions.
- Various Local Education Authorities. Funded some of the interventions provided to some of the families.

Research Autism

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