

Case Study 1: An Evidence-Based Practice Review Report

Theme: Interventions delivered by parents

*How effective are Incredible Years interventions at improving the behaviour of children
with ASD?*

Summary

The current review assesses the effectiveness of Incredible Years (IY) programmes at improving the behaviour of children with autism. IY is a parenting programme for children displaying behavioural problems. Parents meet for two-hourly sessions over a 14-20 week period to learn skills to manage child behaviour (Webster-Stratton, 2015). In recent years, the programme has been adapted for parents of children with autism (Dababnah & Parish, 2016a; Webster-Stratton, 2015). Following COVID-19, there is an increased need for parenting programmes due to the significant disruption the pandemic has had on routine, causing a negative impact on behaviour for children with autism (Narzisi, 2020).

The present review assessed five studies relevant to the review question. Mixed results were found for the effectiveness of IY interventions for child behaviour. Limitations in comparison were discussed with reference to the study designs and statistical analysis. Recommendations for future research, reviews and EP practice have been outlined.

Introduction

Autism Spectrum Disorder and Child Behaviour

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterised by the presence of repetitive behaviours, restricted interests, sensory difficulties and deficits in social communication (Hodges, Fealko & Soares, 2020). Children with ASD can frequently display behavioural and emotional problems such as irritability, hyperactivity and noncompliance (Dababnah, Olsen & Nichols, 2019; O’Nions et al., 2018) with 50% of children with ASD displaying four or more behavioural difficulties (Petrou et al., 2018). Behavioural problems for children with ASD often continue into adolescence, with one in four also holding a diagnosis of Oppositional Defiant Disorder (Kaat & Lecavalier, 2013; Simonoff et al., 2013). These difficulties can be especially challenging for parents, resulting in increased stress levels (Dababnah & Parish, 2016b) and a lack of parenting self-efficacy (Giallo, Wood, Jellett & Porter, 2013; Williams, Hastings & Hutchings, 2020). It is evident that behavioural difficulties for children with ASD have a significant impact on parent stress levels (Dababnah & Parish, 2016b; Dababnah, Olsen & Nichols, 2019) and as such, it is important not only for the child but also for the parent that interventions are in place to help children with ASD manage their behaviour.

Psychological theories aim to demonstrate the social and cognitive problems faced by children with autism, and it is probable that such theories explain some of the child behaviour difficulties displayed. Concerning the social theories of autism, ‘Theory of Mind’ describes the ability to understand others by attributing mental

states to them (Baron-Cohen, 2000). Children with autism find difficulties with this which can lead to problem behaviours such as irritability due to not being able to understand or predict behaviour (O’Nions et al., 2018). However, over the last decade, a new social model has been discussed which highlights that when there is a difference in how individuals – neurotypical and autistic – see the world, there is an empathy deficit (Milton, 2012). Coined the ‘Double Empathy Problem’ this model emphasises a systemic issue that there is a lack of empathy or understanding across people with and without autism. This model would suggest that children with autism can display challenging behaviours as a result of a lack of insight about non-autistic perceptions, as well as receiving a lack of insight into the perceptions and culture of autistic children from non autistic individuals.

Concerning cognitive theories of ASD, the ‘Executive Dysfunction Hypothesis’ (Pennington et al., 1997) proposes that children with ASD struggle with executive functioning resulting in difficulties in memory and attention. These difficulties can cause children with ASD to struggle with following parental instructions which can lead to noncompliance and cause parental stress. Similarly, ‘Central Coherence Theory’ (Frith & Happe, 1994) highlights how children with ASD are incredibly focused on details in a situation that they struggle to coherently link multiple channels of information to a meaningful whole. Taking these models of autism together, it is apparent that children with ASD endure social challenges as a result of seeing the world differently to neurotypical others. These difficulties faced can lead to multiple challenging behaviours.

Incredible Years Interventions

Previous reviews looking at interventions targeting other characteristics of ASD such as social communication and understanding have indicated a multitude of positive results (Karkhaneh et al., 2010; Lindsay, Hounsell & Cassiani, 2017). There have been some reviews investigating interventions for child behaviour however most have occurred out of the UK and in the US (Nevill, Lecavalier & Stratis, 2018; Postorio et al., 2017; Tarver et al., 2019). Parenting programmes are the most approved interventions for child behaviour problems including for children with ASD (Williams, Hastings & Hutchings, 2020). The IY-Basic parenting programme is a UK evidence-based parenting programme for neurotypical children displaying behavioural problems (Webster-Stratton, 2015). It consists of parents meeting with trained leaders for two-hour sessions weekly over a 14-20 week period. Parents learn how to model social communication interactions, manage challenging emotional and behavioural issues as well as managing levels of parental stress (Webster-Stratton, 2015). This is done with the use of video vignettes, role play, coaching, group discussion and support (Webster-Stratton, 2015).

In 2016, Dababnah and Parish adapted the IY programme to be used for the parents of children with ASD. Adaptations of the programme include skills for self-regulation, additional time for aspects such as emotion coaching, dialogue around family stress, play behaviours specific to children with ASD (Dababnah & Parish, 2016a; Williams, Hastings & Hutchings, 2020). This programme was again adapted following parental criticism that the video material was outdated and did not accurately portray children

with ASD. This adaptation was made by original IY creator Webster-Stratton coining the IY-Autism Spectrum and Language Delays Programme (IY-ASLD) (Webster-Stratton, 2015). As such, there have been few published studies of the adapted IY programmes and therefore it is important that the effectiveness is reviewed.

Rationale

The Department for Education has highlighted that ASD has been the most common need for EHC plans in recent years (DfE 2020, 2022). Additionally, the impact of COVID-19 on children with ASD has been significant due to the disruption of their daily routine having a negative impact on behaviour problems (Narzisi, 2020). Colizzi et al. (2020) also found that if children with ASD had significant behavioural problems pre-dating COVID-19, they were twice as likely to display more severe and recurrent behaviour issues than prior to the outbreak. Taking together the ongoing demands of EHC plans and the detrimental impact of COVID-19 for children with ASD, there is a demand for Educational Psychologists (EPs) to be involved in cases involving children with ASD displaying challenging behaviour. It is essential that EPs are able to recommend parenting interventions that are evidence-based and effective. Therefore, the current review will support EPs in assessing the effectiveness of the Incredible Years parenting programmes for improving challenging behaviour for children with ASD.

Review Question

How effective are Incredible Years interventions at improving the behaviour of children with ASD?

Critical Review of the Evidence Base

Systematic Literature Search

A systematic literature search was conducted in January 2023 using the databases PubMed, ERIC, PsycInfo, Medline and Google Scholar. The search terms used are displayed in Table 1.

Table 1

Search Terms

Search Term	Rationale
(Incredible Years Program* or Incredible Years Parenting Program* or Incredible Years Program* Autism or Incredible Years Autism Parenting Program*)	This review is investigating the studies which used an Incredible Years Parenting Programme.
(Children or child or adolescent or youth or preschoolers)	This review is investigating studies using the Incredible Years programme carried out on children
(autis* or autism or ASD or ASC or Autistic Disorder or Asperger’s disorder or PDD-NOS) and (Incredible Years Program*	This review is investigating the impact this parent-led intervention has on children with autism.

Screening

Initial database searches produced 26 results. Before screening the titles of these results, seven duplicate studies were removed as were two studies for not meeting the inclusion criteria (see Table 2). When screening the abstracts of the now 17 studies, five were removed for not meeting the inclusion criteria. Following full-text screening, seven studies were removed leaving five for the current review (see Table 3).

Table 2

Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria	Rationale
1.Type of Publication	The study is peer reviewed, published, and accessible.	The study is not peer reviewed, not published, or unable to access.	To ensure there is high quality in the research methods.
2. Type of data	Primary quantitative data.	Not primary quantitative data.	Primary quantitative data is needed to objectively compare studies.
3. Language	The study is published in English.	The study is not published in English.	To ensure that the research has been accurately understood and reviewed.
3. a. Participants	The participants are aged between 2-11.	The participants are not aged between 2-11.	The current investigation is establishing the effectiveness of the Incredible Years parent-led intervention for young children with Autism.
b.	The participants are described as being children with Autism.	The participants are not described as children with Autism.	
4. Setting	The intervention takes place	The intervention takes place during	The current investigation is

	outside school learning hours.	school learning hours.	looking at a parent-led intervention and therefore must be done outside of school learning hours.
5. Intervention	The study uses an Incredible Years intervention.	The study does not use an Incredible Years intervention.	The current review aims to assess the effectiveness of the Incredible Years intervention for young children with Autism.
6. Outcomes	The study measures at least one outcome relating to child behaviour.	The study does not measure any outcome relating to child behaviour.	The current review is evaluating the effectiveness of the Incredible Years intervention for the behaviour of children with Autism.

Figure 1

*PRISMA Flowchart depicting the systematic search.
See Appendix A for detail of excluded studies.*

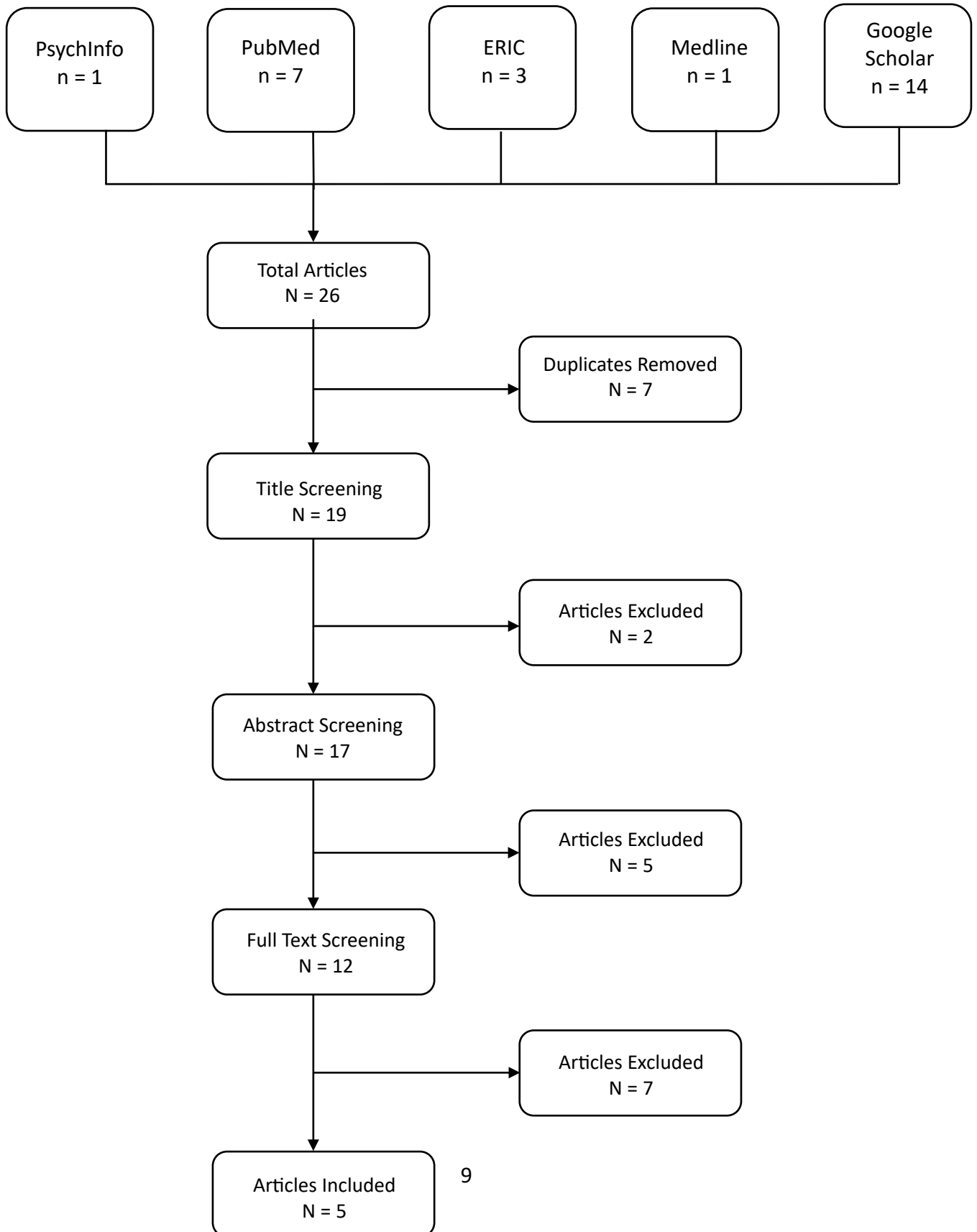


Table 3

References of the Studies included in the Current Review

See Appendix B for the summary of included studies

Included Studies
Hutchings, J., Pearson-Blunt, R., Pasteur, M. A., Healy, H., & Williams, M. E. (2016). A pilot trial of the Incredible Years® Autism Spectrum and Language Delays Programme. <i>Good Autism Practice (GAP)</i> , 17(1), 15-22.
Dababnah, S., & Parish, S. L. (2016). Incredible years program tailored to parents of preschoolers with autism: Pilot results. <i>Research on Social Work Practice</i> , 26(4), 372-385.
Dababnah, S., Olson, E. M., & Nichols, H. M. (2019). Feasibility of the incredible years parent program for preschool children on the autism spectrum in two US sites. <i>Research in Autism Spectrum Disorders</i> , 57, 120-131.
Roberts, D., & Pickering, N. (2010). Parent training programme for autism spectrum disorders: an evaluation. <i>Community Practitioner</i> , 83(10).
Williams, M. E., Hastings, R. P., & Hutchings, J. (2020). The incredible years autism spectrum and language delays parent program: A pragmatic, feasibility randomized controlled trial. <i>Autism Research</i> , 13(6), 1011-1022.

Critical Appraisal of the Studies

Weight of Evidence – See Appendix C

The critical appraisal of studies was conducted using Gough’s (2007) Weight of Evidence (WoE) framework to evaluate the extent to which the evidence used was relevant to the current review. The ‘Weight of Evidence Framework’ outlines three dimensions for weighting the studies used (Harden & Gough, 2012):

(1) WoE A – Methodological Quality

Refers to the quality of execution of the study in relation to quality standards for studies of that type.

(2) WoE B – Methodological Relevance

Refers to how appropriate the research design is in terms of addressing the research question.

(3) WoE C – Topic Relevance

Refers to how appropriate the focus of the study is to the question of the review.

(4) WoE D – Overall Rating of Evidence

An average of WoE A, B and C was calculated for each study.

The WoE scores for the current review are outlined in Table 4.

WoE A measured the methodological quality of the studies in the current review.

Gersten et al. (2005)'s coding protocol was used to assess the studies.

WoE B assessed the methodological relevance of the studies for the review question. The current review question focused on the effectiveness of the IY programme for young children with Autism which was reviewed against the Petticrew and Roberts (2003) recommendations for which studies provided the best type of evidence.

WoE C established the relevance of the study to the review question. To investigate this, factors were considered including the setting, participants, the specific type of intervention used and the outcome measures.

Table 4

Weight of Evidence Ratings

Study	Methodological Quality (WoE A)	Appropriateness of Design (WoE B)	Topic Relevance (WoE C)	Overall Weight of Evidence (WoE D)
Dababnah & Parish (2016b)	2 (medium)	1.5 (low)	1.75 (medium)	1.75 (medium)
Dababnah, Olsen & Nichols (2019)	1 (low)	1.5 (low)	2.75 (high)	1.75 (medium)
Hutchings et al. (2016)	1 (low)	2 (medium)	2.75 (high)	1.91 (medium)
Roberts & Pickering (2010)	1 (low)	2 (medium)	2.25 (medium)	1.75 (medium)
Williams, Hastings & Humphries (2020)	3 (high)	2.5 (high)	2.75 (high)	2.75 (high)

Note 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

Participants

Three of the included studies (Hutchings et al., 2016; Roberts & Pickering, 2016; Williams, Hastings & Hutchings, 2020) were conducted within the UK and therefore received a ‘high’ rating for the setting component for WoE C. The remaining were conducted in the US and received a ‘medium’ rating as although the education system in the US is not dissimilar to the UK, the outcomes may not be as relevant to apply to the UK setting.

There were 125 participants across the five studies that completed the intervention programme. The earlier case studies establishing the feasibility of the intervention had participants ranging from eight to 41 parents. The most recent study (Williams et al., 2020) sourced 53 participants for the first randomised control trial (RCT) of its kind. Participants across all studies were aged between 2-11 years and therefore all studies received a 'high' rating score of the age component of WoE C.

The inclusion criteria declared that participants had to be parents that had children with a diagnosis of ASD. However, there were differences in terms of whether all participants had a diagnosis, on the waiting list and or showing autistic traits.

Dababnah and Parish (2016b) and Dababnah, Olsen and Nichols (2019) were the two studies that described all children as having a confirmed diagnosis of ASD and therefore received a 'high' rating for section B for WoE C. Whereas the other three studies reported some children either waiting for an ASD diagnosis or showing traits of ASD and therefore received a 'medium' score. It is interesting to note that the studies that had a confirmed diagnosis were conducted in the US. The remaining where in the UK which may echo the UK's current long waiting list for ASD diagnoses.

Study Design

Four of the included studies followed a quasi-experimental design without a comparison group and received a 'low' rating for the study design in accordance with Petticrew and Roberts' (2003) guidance for reviews looking into effectiveness of an

intervention. This was due to the lack of control group and therefore lack of quality in the design (Stuart & Rubin, 2008). These four studies used a one group pre-test-post-test design which create challenges around ensuring there are no other impacting variables and to confirm causality. Williams et al. (2020) was the only study reviewed that conducted a RCT. As a result, the Williams et al. (2020) study received a 'high' rating for the study design criterion in WoE B. The presence of a control group in this study meant that the study had higher quality and clearer, more reliable comparisons could be made. The lack of RCTs conducted looking into the effectiveness of IY for children with ASD is due to how recently the current adaptations have been completed.

Conflict of Interest

Two of the included studies (Hutching et al., 2015; Roberts & Pickering, 2010) received a 'high' score for the research authors component of WoE B. These researchers were entirely independent to the intervention. Dababnah and Parish (2016b) received a 'medium' rating as they had been the ones to adapt the programme that their study was testing. The Dababnah, Olsen and Nichols (2019) received a 'medium' rating as their first author, Dababnah, had been involved in the adaptation of the programme. In the final study (Williams et al., 2020) one of the researchers reported receiving financial contribution for the delivery of leadership training of the IY programme. These ratings have been carefully considered as bias can occur in studies dependent on characteristics of the researchers (Simundic, 2013). This can have a negative impact on research quality and can be unethical for researchers to declare a conflict of interest. Therefore, the studies have received

higher ratings if there have been declarations or primarily if the researchers are entirely independent.

Intervention

The Incredible Years intervention used in the studies differed in degree of adaptation. All interventions consisted of 12 weekly 2-hour sessions, though what these sessions comprised of differed. Roberts and Pickering (2010) used the IY Basic (IY-Basic) programme which covers eight key skills in behaviour management as well as aspects to reduce parent stress by coaching children to problem solve. The IY-Basic programme focused on Skinnerian techniques such as immediate reinforcement and behaviour analysis (Francis, 2005). As this IY programme had not been adapted at all for children with ASD, the Roberts and Pickering (2010) study received a 'low' rating within WoE C.

Dababnah and Parish (2016a, b) adapted the IY-Basic programme to include aspects of the sessions that would be more relevant for parents with children with ASD. Such items that differed include additional time for emotion coaching, discussion around family stress, self-regulation skills and the unique play behaviours of children with ASD (Dababnah & Parish, 2016a, b). This adapted programme was the intervention used that they assessed in their 2016 study and as they had adapted the programme for parents with children with ASD, they received a 'medium' rating for WoE C. However, following feedback from their pilot study (Dababnah and Parish 2016 a, b) it was evident that further adaptations were necessary which can be found in the IY-Autism Spectrum and Language Delays programme (IY-ASLD) (Webster-Stratton, 2015).

The remaining studies (Dababnah, Olsen & Nichols, 2019; Hutchings et al., 2015; Williams et al., 2020) used the IY-ASLD and therefore received a 'high' rating within WoE C as this programme held the most recent adaptations following evidence-based feedback. The main differences of the IY-ASLD from the other IY programmes include updated video material accurately depicting children with ASD, more applicable communication and self-regulation skills, pre-academic social and emotion coaching and the use of ASD specific resources and handouts (Williams et al., 2020).

Measures

The studies in the current review clearly presented the measures they used to assess child behaviour differences from the IY intervention. Four of the included studies included direct measures of child behaviour with clear reliability and validity and therefore received a 'high' rating for the outcome measure criterion for WoE C. To measure child behaviour, Dababnah, Olsen and Nichols (2019) used the Aberrant behaviour checklist (ABC) created by Aman and Singh (1994) which contains a 58-item symptom checklist to establish the severity of problem behaviours in children with developmental disabilities. ABC has been widely used in research assessing children with ASD and their behaviour (Aman et al., 2004) and contains the five subscales: irritability, stereotypical behaviour, lethargy, inappropriate speech, and noncompliance/hyperactivity all of which contain strong internal consistency (Kaat, Lecavalier & Aman, 2014). Hutchings et al. (2016) used The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997) which consists of the five

subscales: Emotional problems, Peer problems, Hyperactivity, Conduct problems and Pro-social behaviour. The SDQ has been shown to have high reliability and convergent validity (Goodman, 2001; Hill & Hughes, 2007). Roberts and Pickering (2010) used the Eyberg Child Behaviour Inventory (ECBI) to measure the degree and frequency of problem behaviours which Gross et al., (2007) deemed to have strong reliability and validity. Furthermore, another child behaviour measure with high reliability and validity (Storch et al., 2006) was used by Williams, Hastings, and Hutchings (2020) who used the parent rated Child Behaviour Checklist (CBCL) (Achenbach & Rescorla, 2000). The CBCL contained two subscales: internalising problems and externalising problems, and an additional total score.

Dababnah and Parish's (2016b) study assessed indirect measures of child behaviour. The current review determines indirect measures as measures which are likely to have a direct impact on child behaviour without directly assessing that outcome. The indirect measure to child behaviour conducted by Dababnah and Parish (2016b) was parental stress. The Parenting Stress Index Fourth Edition (Abidin, 2012) was used which measures the child-parent relationship challenges which then lead to parent stress. Containing strong internal consistency, The Parenting Stress Index has been validated in over 25 languages and has been used for more than 30 years with children with ASD (Dumas, 1991). The child scales consist of Adaptability, Reinforces Parent, Distractibility/Hyperactivity, Mood, Demandingness and Acceptability. As Dababnah and Parish's (2016b) study assessed indirect measures that study received a 'low' rating in for the 'outcome measures' for WoE C. Although as the index measures parent stress in relation to

child behaviour with specific child behaviour scales there is significant relevance for the current review question.

Outcomes

Table 5 contains the descriptive statistics and effect sizes of the direct and indirect outcome measures. Table 6 contains the descriptors for the effect sizes as recorded by Cohen (1998). Dababnah and Parish (2016b) clearly reported the effect sizes of their study. Descriptive statistics were clearly presented for three studies (Dababnah, Olsen & Nichols, 2019; Hutchings et al., 2016; Williams, Hastings & Hutchings, 2020) and effect sizes were calculated for the current review. One of the studies (Roberts & Pickering, 2010) only reported the difference in means in their study and therefore no effect size could be calculated. The differences in ease of effect size calculations impacted the WoE A.

Hutchings et al. (2016) highlighted that the Strengths and Difficulties questionnaire identified significant differences between baseline and follow-up in child behaviour scores. These were seen in a decrease of peer problems and a significant improvement in pro-social skills. Although the other subscales showed no other significant differences, overall child behaviour had reduced significantly, and a large effect size was calculated. Similarly, Roberts and Pickering (2010) reported a reduction in ECBI mean scores suggesting that child behaviour levels were not presenting to the same level as before the intervention. These findings should be interpreted with caution due to the small sample sizes, lack of control group and lack

of clear result reporting. These factors have impacted the WoE A and overall WoE D ratings.

Dababnah, Olsen and Nichols (2019) reported no significant decrease in overall child behaviour. However, noted small to medium significant effects in the subscales of irritability and hyperactivity/noncompliance. It is possible that the measure used, the ABC, was not sensitive enough to identify pre/post intervention differences. The ABC is not specifically designed for children aged 2-6 and therefore, may have made identifying challenging behaviours more challenging. Williams, Hastings, and Hutchings (2020) also found no significant differences for child behaviour. Although it is important to note that the study had focused on feasibility of programme delivery and arguably the study was not powered enough to report on significant outcomes which is reflected in WoE C. The outcomes were also heavily reliant on parental reports which can be biased which should be especially considered as parents were aware of their condition allocation which is reflected in WoE A.

For the indirect measure, the child domain of the parent stress index, Dababnah and Parish (2016b) found a significant decrease compared to baseline scores. This was echoed in the overall parental stress scores. The total mean scores had significantly decreased, and the effect size was large. Postintervention, five of the six subscales had decreased significantly: distractibility/hyperactivity, reinforces parent, adaptability, acceptability, and mood. Although the outcome measures show significant decreases for child behaviour, it is important to note that this was an indirect measure and as such is reflected in the 'medium' rating for WoE C.

Table 5

Table showing descriptive statistics and effect sizes for outcome measures

Study	N	Overall Outcome Measure	Pre- Intervention Mean (SD)	Post- Intervention Mean (SD)	Within group Effect Sizes (Cohen's d)	WoE D Rating
Dababnah & Parish (2016b)	14	Parenting Stress Index Fourth Edition	148.6 (21.3)	130.5 (23.1)	1.12 (large)	1.75 (medium)
Dababnah, Olsen & Nichols (2019)	36	ABC	12.12 (3.84)	9.77 (3.58)	0.63 (medium)	1.75 (medium)
Hutchings et al. (2016)	5	SDQ	20.50 (1.34)	18.50 (1.69)	1.31 (large)	1.91 (medium)
Roberts & Pickering (2010)	8	ECBI	156.5	145.5	*	1.67 (low)
Williams, Hastings & Hutchings (2020)	29/25	CBCL	71.28 (8.17)	69.04 (9.00)	0.11 (minimal)	2.75 (high)

**Unable to calculate*

Table 6

Table showing differences in specific subscales relevant to the research question.

Study	Outcome Measure	Subscale	Significance
Dababnah & Parish (2016b)	Parenting Stress Index Fourth Edition	Distractibility/Hyperactivity	p < .03
		Adaptability	p < .02
		Reinforces Parent	p < .05
		Mood Acceptability	p < .02 p < .001
Dababnah, Olsen & Nichols (2019)	ABC	Irritability	p = .004
		Hyperactivity/Noncompliance	p = .001
Hutchings et al. (2016)	SDQ	Peer Problems	p = .035
		Pro-Social Skills	p = .020

Table 7

Table showing descriptors for the above effect sizes

Effect Size	Descriptor
0.8	Large
0.5	Medium
0.2	Small

Conclusions and Recommendations

Summary of Findings

The current review aimed to assess the effectiveness of Incredible Years interventions on child behaviour for young children with ASD. The included studies examined both direct and indirect measures of child behaviour and reported both significant and non-significant results. Three of the five included studies received a 'medium' overall WoE D rating, one study received a 'high' rating, and one study received a 'low' rating.

Mixed findings were reported for child behaviour. One study reported a large significant effect for the direct outcome of child behaviour with a decrease of peer problems and a significant improvement in pro-social skills (Hutchings et al., 2016). Two studies reported non-significant medium and small effects (Dababnah, Olsen & Nichols, 2019; Williams, Hastings & Hutchings, 2020). However, one found small to medium significant effects in the subscales of hyperactivity/noncompliance and irritability (Dababnah, Olsen & Nichols, 2019). Another study reported a large significant effect for an indirect measure of child behaviour – the child domain of the parent stress index with significant differences in four of the five subscales (Dababnah & Parish, 2016).

Taking together the evidence of topic and methodological relevance, methodological quality and statistical effect, it currently cannot be concluded that the IY intervention programmes are effective for young children with autism. Gersten et al. (2005) suggests that there must be at least two studies assessed with a 'high' rating for

WoE A and a combined effect size significantly greater than zero for an intervention to be considered 'evidence-based practice'. As only one of the four studies received a 'high' rating for WoE A, the intervention cannot currently be recommended.

Additionally, as there was one study which reported limited results making effect sizes incalculable, it was not possible to compare the magnitude of child behaviour differences across all five included studies.

Limitations and Recommendations

It should be strongly emphasised that the current review is investigating an intervention which is in its early stages of development. As such, there have been limited studies to date with only one RCT having been conducted (Williams, Hastings & Hutchings, 2020). As a result, the Incredible Years intervention used in the included studies has varied in terms of adaptation. With one study using the IY-Basic not adapted for children with ASD, one used an adapted IY and the remaining three using the IY-ASLD. A future review investigating the impact of the IY-ASLD comparing different RCTs would be useful to further assess the impact IY has on child behaviour for children with ASD. Additionally, there was a lack of IY or IY-ASLD accredited facilitators conducting the intervention across studies and therefore more thorough programme delivery should be considered in future.

The inconsistencies observed in the current review for child behaviour could be attributed to differences in participants, design or measures. These differences have been accounted for within the WoE ratings. The two studies with slightly larger groups of participants (Dababnah, Olsen & Nichols, 2019; Williams, Hastings &

Hutchings, 2020) were the two studies to report non-significant effects. Although these results were found, further investigation must occur to establish these findings as conclusive. It is important to note that none of the included studies had a large group of participants. It is also crucial to consider that due to the small sample sizes across studies that differential effects for factors such as gender, ethnicity, race, and language ability could not be examined (Dababnah, Olsen & Nichols, 2019). It is hoped that future research will be conducted into testing the IY-ASLD programme and reviewing the effectiveness of the intervention further.

A variety of preliminary suggestions have been proposed around future assessment of the effectiveness of IY programmes for young children with ASD. Due to the IY intervention being in the early stages of adaptation and testing, and the varied findings in the current review, it is clear more research must be undertaken.

Therefore, it is recommended that EPs recommend the IY interventions with caution for parents of children with ASD until future investigations and reviews produce conclusive positive results.

References and Appendices

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Appendix A: Excluded Studies

Table 8

Studies Excluded during Full Text Screening with Exclusion Criteria Codes

Full Study Reference	Exclusion Criteria Code
Dababnah, S. (2014). Pilot trial of the Incredible Years for parents of preschool children with autism spectrum disorder.	1. The study is a thesis not a published study.
Dababnah, S., & Parish, S. L. (2016). Feasibility of an empirically based program for parents of preschoolers with autism spectrum disorder. <i>Autism</i> , 20(1), 85-95.	7. The outcomes do not measure child behaviour.
McIntyre, L. L. (2008). Parent training for young children with developmental disabilities: Randomized controlled trial. <i>American Journal on Mental Retardation</i> , 113(5), 356-368.	4. b. The participants are not all described as being children with Autism.
Pierce, K., & Lyons, R. (2019). Parent training programmes in the early years: benefits and recommendations from an evaluation of the Incredible Years Programme for Autism and Language Delays. <i>Good Autism Practice</i> , 20(1).	2. This study does not include primary quantitative data – either descriptive statistics or data relevant to review question.
Schultz, T. R. (2011). <i>Evaluating the effectiveness of the core content of the incredible years with and without visual performance feedback for parents of children with autism</i> . University of Missouri-Columbia.	1. This study is a thesis and not a published study.
Valencia, F., Urbiola, E., Romero-González, M., Navas, I., Elías, M., Garriz, A., ... & Villalta, L. (2021). Protocol for a randomized pilot study (FIRST STEPS): implementation of the Incredible Years-ASLD® program in Spanish children with autism and preterm children with communication and/or socialization difficulties. <i>Trials</i> , 22(1), 1-10.	1. This study was a proposal and was not finished or published.
Weston-Webber, N., Liberty, K., & Sutherland, D. (2012). The effect of a tailored parenting programme with parents	1.

of young children with autism on children's play and behaviour.

Not accessible. Only a PowerPoint was attached.

Appendix B: Mapping the Field

Table 9

Summary of Included Studies

Study	Study Design	Sample size	Age of children	Country	Intervention	Measures	Outcomes
Dababnah & Parish (2016)	Quasi-experimental	17 parents 14 parents completed the programme.	3-6 years	US	IY-Basic adapted for children with ASD	The Parenting Stress Index Fourth Edition	Improvements in parent stress and positive reactions from parents
Dababnah, Olsen & Nichols (2019)	Quasi-experimental	50 parents 41 completed the programme.	2-6 years	US	IY-ASLD	Aberrant Behaviour Checklist (ABC)	No significant decrease in child behaviour.
Hutchings et al. (2016)	Quasi-experimental	Nine parents	2-5 years	UK	IY-ASLD	The Strengths and Difficulties Questionnaire	Increase in pro-social behaviour and reduction in peer problems.
Roberts & Pickering (2010)	Quasi-experimental	Eight parents	5-11 years	UK	IY-Basic	Eyberg Child Behaviour Inventory (ECBI)	Reduction of intense child behaviours.
Williams et al. (2020)	Randomised Control Trial (RCT)	58 randomised 53 completed the programme	2-8 years	UK	IY-ASLD	Child Behaviour Checklist (CBCL)	No significant differences in child behaviour.

Appendix C: Weight of Evidence (WoE)

WoE A – Methodological Quality

The Gersten et al. (2005) coding protocol was used for the five included studies.

Table 10

Gersten et al. (2005) coding protocol

Rating	Criteria	Rationale
3 (high)	Study meets at least 7 essential criteria and 4 desirable criteria	Adapted from the Gersten et al.'s (2005) coding protocol
2 (medium)	Study meets at least 5 essential criteria and at least 4 desirable criteria	
1 (low)	Study meets less than 5 essential criteria and/or 2 desirable criteria	

Table 11

WoE A Ratings using Gersten et al. (2005) coding protocol

Study	Essential Criteria Satisfied	Desirable Criteria Satisfied	Overall WoE A Rating
Dababnah and Parish (2016b)	5	2	1 (low)
Dababnah, Olsen & Pickering (2019)	6	4	2 (medium)
Hutchings et al. (2016)	3	1	1 (low)
Roberts & Pickering (2010)	3	1	1 (low)
Williams, Hastings & Hutchings (2020)	8	6	3 (high)

WoE B – Appropriateness of the Study Design

Table 12

WoE B Criteria, Weighting and Rationale

Criteria	Weighting	Rationale
A. Study Design	3. Randomised Control Trial	Randomised control trials are the most appropriate type of study for an 'effectiveness' question (Petticrew & Roberts, 2003). Following this are quasi-experimental designs. Having a control group ensures higher quality research.
	2. Quasi-Experimental design with control group	
	1. Quasi-Experimental design without control group	
B. Research Authors	3. Entirely independent researchers	Bias can occur in studies dependent on characteristics of the researcher. This can have an impact on the research quality (Simundic, 2013). Researchers should declare conflict of interest as an ethical consideration. As such, the rating is higher if a declaration is made.
	2. Conflict of interest in the programme e.g., author as creator or receiving financial contribution	
	1. Suggestion of but no disclosure	

Table 13

WoE B Criteria and Ratings

Study	Criteria A	Criteria B	WoE B Rating
Dababnah & Parish (2016b)	1	2	1.5 (low)
Dababnah, Olsen & Nichols (2019)	1	2	1.5 (low)
Hutchings et al. (2016)	1	3	2 (medium)
Roberts & Pickering (2010)	1	3	2 (medium)
Williams, Hastings & Hutchings (2020)	3	2	2.5 (high)

Note. 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

Weight of Evidence C (WoE C) – Topic Relevance

Table 14

WoE C Criteria, Weighting and Rationale

Criteria	Weighting	Rationale
A. Setting	3. The intervention took place in the UK	Studies conducted in the UK will be more applicable to EP practice and educational settings in the UK.
	2. The intervention took place in a country with a similar education setting to the UK	
	1. The intervention took place in a country with an education system dissimilar to the UK	
B. Autism Diagnosis	3. All children had a clinical diagnosis of Autism Spectrum Condition/Disorder (ASC/ASD)	The current review is assessing the impact an intervention has specifically on children with Autism.
	2. Some children had noted Autistic traits and were awaiting a diagnosis	
	1. Children did not have Autism Spectrum Condition/Disorder (ASC/ASD)	
C. Intervention	3. The Incredible Years Autism programme is administered	The current review is assessing the impact of the Incredible Years Intervention for children with Autism. As the adaptation of the Incredible Years programme is novel, the studies so far vary in their adaptations.
	2. An adapted Incredible Years	

<p>D. Outcome Measure</p>	<p>programme for children with Autism is delivered</p> <p>1. An Incredible Years intervention is delivered that has not been adapted to</p> <p>3. The outcome measures include direct measures of child behaviour with established reliability and validity</p> <p>2. The outcome measures include direct measures of child behaviour without established reliability and validity</p> <p>1. The outcome measures include indirect measures of child behaviour</p>	<p>The current review is assessing the impact the Incredible Years programme has on child behaviour for children with Autism. Therefore, direct measures are preferred.</p>
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Table 15

WoE C Ratings

Study	Criteria A Rating	Criteria B Rating	Criteria C Rating	Criteria D Rating	Overall WoE C Rating
Dababnah & Parish (2016b)	2	3	1	1	1.75 (medium)
Dababnah, Olsen & Nichols (2019)	2	3	3	3	2.75 (high)
Hutchings et al. (2016)	3	2	3	3	2.75 (high)
Roberts & Pickering (2010)	3	2	1	3	2.25 (medium)
Williams, Hastings & Hutchings (2020)	3	2	3	3	2.75 (high)

Note 1-1.6 (low), 1.7-2.3 (medium), 2.4-3 (high)

Appendix D: Example Coding Protocols

Coding protocol: Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C. & Innocenti, M. S. (2005). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional children*, 71(2), 149-164. doi:10.1177/001440290507100202

Name of coder: Abigail Tutton **Date:** 05.02.2022

Full study reference: Dababnah, S., & Parish, S. L. (2016b). Incredible years program tailored to parents of preschoolers with autism: Pilot results. *Research on Social Work Practice*, 26(4), 372-385. <https://doi.org/10.1177/1049731514558004>

Research design: Quasi-experimental

Type of publication: Journal article

Essential Quality Indicators *Describing Participants*

Was sufficient information provided to determine/confirm whether the participants demonstrated the disability(ies) or difficulties presented?

- Yes
 No

- N/A
 Unknown/Unable to Code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

- Yes
 No
 N/A
 Unknown/Unable to Code

Was sufficient information given characterizing the interventionists or teachers provided? Did it indicate whether they were comparable across conditions?

- Yes
 No
 N/A
 Unknown/Unable to Code

Implementation of the Intervention and Description of Comparison Conditions

Was the intervention clearly described and specified?

- Yes
- No
- N/A

Unknown/Unable to Code

Was the fidelity of implementation described and assessed?

- Yes
- No
- N/A

Unknown/Unable to Code

Was the nature of services provided in comparison conditions described?

- Yes
- No
- N/A

Unknown/Unable to Code

Outcome Measures

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalised performance?

- Yes
- No

N/A

Unknown/Unable to Code

Were outcomes for capturing the intervention's effect measured at the appropriate times?

- Yes
- No

N/A

Unknown/Unable to Code

Data Analysis

Were the data analysis techniques appropriately linked to key research questions and hypotheses? Were they appropriately linked to the unit of analysis in the study?

Yes

No

N/A

Unknown/Unable to Code

Did the research report include not only inferential statistics but also effect size calculations?

Yes

No

N/A

Unknown/Unable to Code

Desirable Quality Indicators

Was data available on attrition rates among intervention samples? Was severe overall attrition documented?

Yes

No

N/A

Unknown/Unable to Code

Did the study provide not only internal consistency reliability but also test-retest reliability and interrater reliability (when appropriate) for outcome measures?

Yes

No

N/A

Unknown/Unable to Code

Were data collectors and/or scorers blind to study conditions and equally (un)familiar to examinees across study conditions?

Yes

No

N/A

Unknown/Unable to Code

Were outcomes for capturing the intervention's effect measured beyond an immediate post-test?

- Yes
- No

- N/A
- Unknown/Unable to Code

Was evidence of the criterion-related validity and construct validity of the measures provided?

- Yes

- No
- N/A
- Unknown/Unable to Code

Did the research team assess not only surface features of fidelity implementation (e.g. number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?

- Yes

- No
- N/A
- Unknown/Unable to Code

Was the nature of instruction or series documented in the comparison conditions?

- Yes
- No
- N/A

Did the research report include actual audio or videotape excerpts that capture the nature of the intervention?

- Yes
- No

- Unknown/Unable to Code

Were results presented in a clear, coherent fashion?

- Yes
- No
- N/A

Quality Indicators

Essential Quality Indicators = 5. Desirable Quality Indicators = 2

Total Indicators = 7