



Libraries and Learning Services

University of Auckland Research Repository, ResearchSpace

Copyright Statement

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

This thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognize the author's right to be identified as the author of this thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from their thesis.

General copyright and disclaimer

In addition to the above conditions, authors give their consent for the digital copy of their work to be used subject to the conditions specified on the [Library Thesis Consent Form](#) and [Deposit Licence](#).

**A pilot study to evaluate the efficacy of
adding a structured home visiting
intervention to improve outcomes for
high-risk families attending the Incredible
Years[®] parent programme**

Dianne Lees

A thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy in Psychiatry

The University of Auckland

2017

Abstract

Background: Child conduct problems are increasing and left untreated, they have the potential to develop into adult criminality. Evidence-based treatments such as the Incredible Years[®] Parent Programme are effective but high-risk families often have poor response to such treatment. Adding a home visiting programmes has the potential to improve outcomes.

Aim: To evaluate the acceptability and efficacy of adding a structured Home Parent Support intervention to improve outcomes for high-risk families attending the Incredible Years[®] Parent Programme. The primary hypothesis was that Home Parent Support would improve child behaviour scores at post-treatment on the Eyberg Total Problem Scale. Results would inform the design of a larger prospective study.

Method: A single blind, parallel, superiority, randomised controlled trial was conducted. Parents of children aged 3-7 years with conduct problems ($N = 126$) were randomly allocated in a computer-generated 1:1 ratio in permuted blocks to receive the addition of Home Parent Support ($n = 63$) or to the control group of Incredible Years[®] Parent Programme alone ($n = 63$). Data on standard child behaviour measures were collected at pre- and post-treatment and six-month follow-up and were analysed using an intention-to-treat design. Qualitative data were collected at each time point and were coded to identify themes and relationships between themes by randomised group.

Intervention: Home Parent Support is a 10 session home visiting enhancement developed by the author to provide personalised coaching to address individual and systemic barriers for implementing effective parenting strategies.

Setting: The trial was carried out in a clinical service in Tauranga, New Zealand.

Results: Complete data were collected at post-treatment for $N = 123$ (97.6%, treatment $n = 62$, control $n = 61$) and at follow-up $n = 115$ (91.3% treatment $n = 62$, control $n = 53$). Results show no additional benefit of Home Parent Support at post-treatment ($F(1,124) = 0.2, p = .624$). While the primary hypothesis was not supported, the maintenance of change at six-month follow-up showed some benefit on ECBI-P ($F(2,248) = 3.5, p = .032$). Secondary outcomes also showed benefits in terms attendance, retention, per protocol analysis and percentage of participants in the clinical range at post-treatment. Māori responded equally to treatment and satisfaction was high in both groups. Power calculations represent a realistic sample size to replicate this trial.

Qualitative analysis showed parents valued the additional support. Their narratives demonstrated an understanding of principles for behaviour change, including their capacity to reflect on their own interactions with their children. This insight may contribute to maintenance of change over time.

Conclusion: The additional benefit of Home Parent Support was not evident at post-treatment, however the maintenance of change at six-month follow-up was promising suggesting longer term benefits. The addition of Home Parent Support could be a realistic and clinically practical intervention to improve outcomes for vulnerable families while they attend the Incredible Years[®] group programme. Recommendations for future development include a larger prospective study with a larger sample of Māori participants, follow-up at one or two years to assess maintenance of change, and a study of mediators and moderators.

Trial Registration Australian New Zealand Clinical Trial. ACTRN12612000878875

Acknowledgments

When I began this research project I was blissfully ignorant of the enormity of the task ahead. It has been a long steady journey of personal growth and discovery that I could not have completed without the support of others.

I am grateful for the funding from the Ministry of Health to carry out this research as part of the Government's commitment to improving outcomes for children with conduct problems.

I am indebted to all the families who agreed to participate in the trial and share their experiences. I hope I have done justice to their personal stories.

To my supervisors, Professor Sally Merry and Professor David Fergusson, who have both shared their knowledge and time freely. David's sound advice on methodology and his constructive feedback were both challenging and helped refine the final script. Your final approval was appreciated and valued. Sally's support and encouragement from day one was both realistic and motivating. Her consistent and positive feedback kept me on track and shaped my learning and writing. You remained calm and positive when I felt overwhelmed.

Professor Chris Frampton for his endless patience and guidance through the statistical analysis. You were reliable, predictable and kept your sense of humour when I lost mine.

There have been others who have given advice and feedback: Judy Hutchings, Frances Gardner, Carolyn Webster-Stratton, and Sarah Hetrick. I have appreciated your willingness to support my learning.

I had dedicated and skilled research assistants carrying out interviews, collecting and entering data. Thank you Nicky, Trish, Gill and Susie.

There are many people from my work place who have supported me in numerous ways from practical support and advice, enquiring about progress, and exploring ideas, concepts and "chewing the fat" with me particularly Colin, Sue, Judy and Anja. Also a special thank you to Sandra and Raewyn, the therapists who worked with me delivering this intervention during the trial period.

I acknowledge the professional advice on formatting and editing from Academic Consulting.

Finally, but not least, a big thank you to my family. To my adult children, you were my constant cheerleaders encouraging me on, and to my husband Hugh, you always believed I would finish and were a constant source of encouragement and practical support. For the early morning coffees, cooked meals, putting up with my unavailability and reading thousands of words, thank-you! I couldn't have done it without you.

Table of Contents

Abstract	ii
Acknowledgments	iv
Table of Contents	vi
List of Tables	x
List of Figures	xi
Chapter 1: Introduction	1
Conduct Problems in Children	1
Early Intervention Treatment for Conduct Problems	2
The Incredible Years® Parent Programme	3
Risk Factors for Poor Response to Treatment	4
Enhancement Programmes	5
Home Visiting	5
Current Study	6
Thesis Outline	7
Chapter 2: Literature Review	9
Interventions for Treating Conduct Problems	9
Methods	10
Eligibility criteria	10
Information sources	10
Search	10
Study selection	10
Outcomes and measurements	11
Data extraction	12
Assessment of risk of bias	12
Meta-analysis	13
Heterogeneity	13
Subgroup analysis	14
Results	14
Characteristics of included studies	14
Characteristics of enhancements	15
Risk of bias	18
Effects of intervention on child behaviour	24
Dropouts	25
Effects of intervention on parental mental health	26
Effects of intervention on parent satisfaction	27
Effects of intervention on parenting skill	27
Summary	27
Limitations and strengths of this review	30
Conclusion	31
Chapter 3: Development of the Home Parent Support Intervention Incredible Years® Specialist Service and Home Parent Support	33

Background to Addressing Conduct Problems in New Zealand	33
Background to Incredible Years® in New Zealand	34
Establishment of Incredible Years® Specialist Service	34
Focus of enhancement interventions.....	35
Home Parent Support intervention.....	35
Pilot evaluation HPS	36
Development of Home Parent Support Structured Guide	36
Core Skills Required	37
Training.....	37
Supervision.....	38
Working collaboratively	39
Enhancing uptake of parent skills	39
Awareness of systemic factors	39
Consultation.....	40
Feedback from parents	40
Feedback from therapists	40
Trial of draft HPS therapist guide	41
Feedback from parent focus group on draft therapist guide	41
Feedback from HPS therapists.....	42
Feedback from IYP group leaders	42
Refinement of HPS Therapist Guide.....	43
Conclusion.....	44
Chapter 4: Methods.....	45
Design	45
Ethical Approval	45
Registration of Trial and Publication of Protocol	45
Setting.....	45
Participants.....	45
Inclusion criteria	46
Exclusion criteria	46
Withdrawal criteria	46
Intervention.....	46
Incredible Years® basic parent programme.....	46
Home Parent Support	47
Outcomes.....	47
Primary outcome	47
Secondary outcomes	47
Measurements.....	48
Screening measurement	48
Pre-treatment assessment	49
Post-treatment assessment.....	49
Follow-up assessment	49
Sample Size	50
Randomisation and Sequence Generation	50
Integrity.....	52
Randomisation	52
Allocation concealment.....	52
Blinding.....	52

Research assistants	52
Incredible Years® group leaders.....	53
IYP group leader fidelity.....	53
Home Parent Support	53
Home Parent Support therapist guide	54
Statistical Methods	54
Quantitative analyses	54
Qualitative analysis	55
Participant Feedback	56
Conclusion.....	56
Chapter 5: Quantitative Results.....	57
Analysis Overview	57
Integrity of HPS intervention.....	57
Demographics	60
Baseline measures	61
Baseline measures for engagement	61
Primary Outcome	62
Secondary Outcomes.....	63
Change in child behaviour at post-treatment on ECBI-I and SCS.....	63
Maintenance of change in child behaviour at six-month follow-up	63
Percentage in clinical range over time	67
Numbers needed to treat	69
Retention and engagement	69
Child behaviour scores in per-protocol analysis	70
Family Questionnaire child behaviour measures	72
Family Questionnaire parent relationship quality	74
Effect of ethnicity on treatment response.....	74
Numbers needed to treat for Māori	76
Effect of parent mental health problems on treatment response	76
Change in parenting practice.....	79
Parent satisfaction with Incredible Years® programme	80
Participant confidence at six-month follow-up	80
Being Part of the Research Trial.....	81
Adverse Events	81
Summary of Main Findings.....	81
Conclusion.....	82
Chapter 6: Qualitative Analysis	83
Data Collection and Analysis Methods.....	83
Findings	84
Pre-treatment.....	84
Post-treatment	85
Benefits of Home Parent Support	87
Six-month follow-up	89
Summary	93
Strengths and Weakness of Study.....	95
Conclusion.....	95
Chapter 7: Discussion.....	96

Main Findings	97
Change in child behaviours.....	97
Change in clinical range.....	98
Ethnicity.....	98
Mental health problems.....	99
Retention.....	99
Benefits of HPS.....	100
Difference in ECBI scales.....	104
Effect of being part of trial.....	105
Chapter 8: Conclusion	106
Study Strengths	108
Study Limitations	108
Deviation from Published Protocol	109
Power Calculations for Future Replication	109
Recommendations for Further Research	110
Summary	111
Appendices	113
Appendix A: Search Strategy	113
Appendix B: Incredible Years® Specialist Service Guide	115
Appendix C: Incredible Years® Specialist Service Assessment	124
Appendix D: HPS Therapist Guide Session Checklist	128
Appendix E: Follow-Up Questionnaire	132
Appendix F: Informed Consent	133
Appendix G: Additional Contacts	134
Appendix H: Additional Māori Cultural Support	135
Appendix I: Research Assistant Information Sheet	136
Appendix J: Incredible Years® Group Leaders Research Information	138
Appendix K: Participant Research Information	139
Appendix L: Participant Feedback	140
Appendix M: Post-treatment Interview Questionnaire	141
Appendix N: Follow-up Interview Questionnaire	143
Appendix O: Post-treatment Satisfaction Questionnaire	144
References	146

List of Tables

Table 1. Overview of selected studies	15
Table 2. Characteristics of enhancement	16
Table 3. Risk of bias	19
Table 4. Other outcomes.....	27
Table 5. Schedule of data collected	49
Table 6. Therapist guide fidelity check	58
Table 7. Parent demographic characteristics at baseline	60
Table 8. Child demographic characteristics at baseline	61
Table 9. Baseline scores for each group	61
Table 10. Baseline scores by group for engagement	62
Table 11. Primary outcome pre-post change on ECBI-P	62
Table 12. Comparison of treatment effect over time.....	65
Table 13. Change in clinical status for those in the clinical range at pre-treatment.....	68
Table 14. Numbers needed to treat.....	69
Table 15. Number and percentage of participants with 70% engagement	70
Table 16. Per-protocol child behaviour scores pre–post-treatment.....	71
Table 17. Comparison of treatment effect on Family Questionnaire measures of child behaviour	73
Table 18. Change in parent relationship.....	74
Table 19. Pre- to post-treatment child behaviour scores for Māori and non-Māori.....	75
Table 20. Māori participant numbers needed to treat.....	76
Table 21. Participants with mental health problems at pre-treatment and follow-up.....	77
Table 22. Comparison of treatment effect across mental health profile over time	78
Table 23. Parenting practice	79
Table 24. Pre-treatment expectations of all participants attending IYP	84
Table 25. Post-treatment categories and themes for participants in IYP and HPS	86
Table 26. Follow-up interview	90
Table 27. Power calculations.....	110

List of Figures

Figure 1. PRISMA flow diagram	11
Figure 2. Child behaviour outcomes	24
Figure 3. Follow-up data	25
Figure 4. Dropout data.....	26
Figure 5. Participant flow	51
Figure 6. Participant flow	59
Figure 7. Eyberg Problem scores mean change.....	66
Figure 8. Eyberg Intensity scores mean change	66
Figure 9. Social Competence scores mean change.....	67
Figure 10. Percentage in clinical range across time for each treatment group.....	69
Figure 11. Effect of treatment on ECBI-P scores for ethnic groups across time	76
Figure 12. Post-treatment parent satisfaction	80
Figure 13. Relationship between themes in this study	94

Chapter 1: Introduction

Conduct Problems in Children

Improving outcomes for children with challenging behaviour has been a personal and professional interest for me throughout my career. Seeing the impact of conduct problems on the individual child, peers, caregivers and teachers, as well as the disruption in the family, school and community, has motivated my involvement with these families/whānau.

Conduct problems include antisocial, aggressive, dishonest, delinquent, defiant and disruptive behaviours (Blissett et al., 2009). Previous research has shown there has been an increase in the incidence and intensity of child conduct problems nationally and internationally (Collishaw, Maughan, Goodman, & Pickles, 2004) and this is of concern. In New Zealand prevalence rates are an estimated 5% to 10% of children and the intensity of problems is rising (Boden, Fergusson, & Horwood, 2010; Church, 2003). These behaviours negatively impact on parental wellbeing and result in increased demands on health, education and social services (Church, 2003; Scott, Knapp, Henderson, & Maughan, 2001). Conduct problems, aggressive behaviour and poor emotional regulation in young children are important predictors of later antisocial and criminal behaviour in some adolescents, and the effectiveness of interventions diminishes with age (Blissett et al., 2009; Boden et al., 2010; Church, 2003; Fergusson, Boden, & Hayne, 2011; Tremblay et al., 2004). Adolescents who have an early history of conduct problems are disproportionately represented in youth offences (Tremblay et al., 2004). Additionally, longitudinal studies have established that conduct problems in childhood are precursors to a range of adverse outcomes in adulthood (Blissett et al., 2009; Webster-Stratton, Rinaldi, & Reid, 2011). The Christchurch Health and Development Study showed a statistically significant relationship between that extent of early conduct problems and later crime (Fergusson, Horwood, & Ridder, 2005). Better outcomes are achieved by addressing conduct problems in young children when the behaviour is still malleable and patterns of parental responding are less likely to be punitive (McCart, Priester, Davies, & Azen, 2006). Without effective early intervention, these problems have the potential to lead to long-term problems including substance abuse, mental health difficulties, violent behaviour, and poor physical health (Collishaw et al., 2004; Fergusson et al., 2011). Therefore, it is prudent to identify those young people at risk of this outcome and provide an

evidence-based intervention early in the life of the child before problematic behaviours have become entrenched and parent-child relationships have broken down.

In considering how to address these, it is accepted that environmental and genetic factors have a role in the development of challenging behaviour; however, it is the environmental factors that are more readily addressed. Behavioural and Social Learning theories posit that children learn behaviour within the context of their environment (Bandura, 1977). Children raised in a positive and nurturing environment are more likely to have pro-social friendship skills, an ability to regulate their emotional responses, and to achieve appropriate educational standards. On the other hand, children raised in environments with limited resources, by parents who have health problems and who use punitive parenting practices, are less likely to achieve good outcomes (Boden et al., 2010). Intervening with an effective parenting programme has been shown to address many of the environmental factors contributing to the development of antisocial and aggressive behaviours in children (Bunting, 2004; Furlong et al., 2013), and improve their long-term outcomes (K. Jones, Daley, Hutchings, Bywater, & Eames, 2008; Webster-Stratton et al., 2011).

Early Intervention Treatment for Conduct Problems

Parent training programmes based on behavioural principles and Social Learning theory are the treatment of choice for children with conduct problems (Reyno & McGrath, 2006; Scott & Dadds, 2009), and earlier intervention is better. Intervening early in the life of the child has proven long-term benefits for children (K. Jones et al., 2008; Webster-Stratton et al., 2011), and better outcomes for the family and the community than treatment in adolescent years (Gluckman, 2011; K. Jones et al., 2008). Heckman (2006) identified wider benefits from early childhood intervention that included improved learning in schools, as well as reduced crime, and less teenage pregnancy and welfare dependency.

Studies have shown that improving parenting skills can reduce problem behaviours and improve parental wellbeing (Hutchings, Bywater, Daley, et al., 2007; Webster-Stratton & Reid, 2004). In particular, Furlong and others found behavioural and cognitive-behavioural group-based parenting programmes were effective in improving conduct problems, parental mental health and parenting practices (Furlong et al., 2013). Early childhood intervention is also cost effective (M. Cohen, 2005; Scott, Knapp, et al., 2001).

Previous studies on cost-benefit analysis have already shown efficacy, in that committing resources early in the life of a child prevents adolescent involvement in the justice system with high rates of return on investment in general (Bonin, Stevens, Beecham, Byford, &

Parsonage, 2011). For example, Heckman (2006) showed benefits of up to 17% return on dollars invested for early intervention programmes in the USA. Scott and colleagues (2001) estimated the cost of public services in an inner London borough used by an individual with conduct disorder to be 10 times greater than the cost of services provided to an individual with no problems. Church (2003) found similar costs in New Zealand and also found cost efficacy for early intervention; successful intervention for a 5-year-old costs approximately \$5,000 compared to \$60,000 for an adolescent. Furthermore, Church found the success rate is 70% greater for younger children. Scott and colleagues (2001) also found long-term returns for the Incredible Years® parent programme (IYP) in the United Kingdom to be 10 times higher than the cost of investment.

The Incredible Years® Parent Programme

The Incredible Years® parent programme (IYP) is one evidence-based intervention with extensive research showing effectiveness for children with conduct problems (Furlong et al., 2013; Hartman, Stage, & Webster-Stratton, 2002; Hutchings, Bywater, Daley, et al., 2007; K. Jones et al., 2008; Scott, Knapp, et al., 2001; Webster-Stratton et al., 2011). Results have been replicated in a number of cultures, e.g., Wales, Ireland, Norway, USA, Canada, England (Beauchaine, Webster-Stratton, & Reid, 2005; Kaminski, Valle, Filene, & Boyle, 2008; Larsson et al., 2009; Webster-Stratton, 2009) and also for foster families where the children have additional high needs (Bywater et al., 2011; McGilloway et al., 2012). There is a small but growing body of literature demonstrating effectiveness of IYP programmes in New Zealand, for example with Māori participants (Altena & Herewini, 2009; Berryman, Woller, & Glyn, 2009; Dunn, 2012), solo parents with children with Attention Deficit Hyperactivity Disorder (Lees & Ronan, 2008), within the Ministry of Education (Dunn, 2012; Fergusson, Stanley, & Horwood, 2009; Stanley & Stanley, 2005; Sturrock et al., 2013; Sturrock, Gray, Fergusson, Horwood, & Smits, 2014), and in the health sector (Lees & Fergusson, 2015). Despite these good results, about one third of children with behavioural problems whose parents attend IYP still experience difficulties and are at risk of developing chronic problems in adolescence (Larsson et al., 2009; Scott, Spender, Doolan, Jacobs, & Aspland, 2001; Webster-Stratton, 2011). In a trial with children initially within the clinical range, Webster-Stratton and colleagues (2011) found that post-treatment child behaviour scores remaining within the clinical range was a predictor of adolescent engagement in delinquent acts. Achieving post-treatment scores within the normal range was more likely to result in better long-term outcomes.

Risk Factors for Poor Response to Treatment

Those who do poorly despite treatment often have risk factors that can be identified prior to intervention. While the literature is varied on which specific factors can be contributed to poor treatment outcomes, generally the factors cluster into four categories (Beauchaine et al., 2005; Frampton, McArthur, Crowe, Linn, & Lovering, 2008; Gardner, Hutchings, Bywater, & Whitaker, 2010; Nievar, Van Egeren, & Pollard, 2010; Reyno & McGrath, 2006; Shaw, Gilliom, Ingoldsby, & Nagin, 2003; Tremblay et al., 2004):

- i. Child variables (severity of child behaviour, referral source, sex)
- ii. Parent variables (maternal psychopathology/depression, coercive/punitive parenting style, maternal age, negative life events/stressors)
- iii. Family demographics (single parent, family size, low-income, education/occupation, minority status)
- iv. Participation variables (treatment attendance, perceived barriers to treatment participation).

Other factors for poor response to treatment identified in the literature, and observed from personal experience of delivering the programme, cross the four domains above and include parental psychopathology and stress. For example, factors can include lack of partner support, resistance to change in the home, parents' unrealistic and developmentally inappropriate expectations for children, adverse child rearing practices and negative cognitions and perceptions of child behaviour (Beauchaine et al., 2005; Gardner et al., 2010; Hartman et al., 2002; Hutchings, Bywater, Williams, Lane, & Whitaker, 2012; Lees & Fergusson, 2015). This demonstrates that child behaviour occurs in the context of the interplay between parent and child characteristics within the wider family system.

Families with multiple-risk factors are more likely to drop out (Bagner & Graziano, 2012) and therefore do not get the benefit of the entire content of the programme. Dose effect has been found to affect outcomes (Baydar, Reid, & Webster-Stratton, 2003; Peacock, Konrad, Watson, Nickel, & Muhajarine, 2013). Indeed, Reyno and McGrath (2006) found that those families who achieved high course completion rates were more likely to have better long-term outcomes, as attendance at parent training programmes has been identified as a predictor of treatment outcomes, with poor attendance associated with poorer outcomes. Consequently, programmes that improve engagement are likely to have better outcome effect sizes (Bywater et al., 2009; Ingoldsby, 2010). One way to achieve this is to provide additional support for the most vulnerable families to improve engagement while they attend an evidence-based

parent training programme. The focus and format of enhancement interventions vary and outcomes to date are equivocal (see Chapter 2).

Enhancement Programmes

Enhancement programmes aim to improve outcomes of a parent programme for the more vulnerable families who do not make sufficient change when attending a parent programme. Enhancements that improve engagement and completion rates are more likely to maximise the impact of the programme because this ensures families receive an adequate “dose” of the treatment (Ingoldsby, 2010). The enhancement intervention needs to support parents to make changes in their parenting approach and to address any barriers to accomplishing this change. Exploring the motivation for change and empowering parents to make this change requires the therapist to be flexible and skilled in different theoretical modalities to address resistance, negative attributes, dysfunctional family systems and attachment relationships (Scott & Dadds, 2009).

The format and content of current enhancement programmes vary. Some use home visiting, others use extra group sessions and/or individual sessions. The content varies between extending topics to include new material and revising content already covered in the parent programme. Irrespective of format, content and delivery, there is little research showing effectiveness of these enhancements to date. While there are many benefits of a home visiting enhancement, there are few programmes that utilise this format. Finding the best mix of format, content, dose and therapeutic approach for an effective enhancement is ongoing.

Home Visiting

Home visits are also used to deliver parenting interventions, not just as enhancements to group programmes. Like group parent programmes, most home visiting programmes are based on the premise that parents play an important role in shaping the outcomes of their children, and that intervention in early childhood ensures input in a sensitive developmental period (Sar, Antle, Bledsoe, Barbee, & Van Zyl, 2010; Shaw et al., 2003). There is also an increasing awareness of the importance of the early caregiving environment and the impact this has on early neurological development (Daro, 2006). Over the last 20 years there has been an increase in home visiting programmes in an attempt to address child maltreatment, reduce infant mortality and improve child wellbeing (Donelan-McCall, Eckenrode, & Olds, 2009).

Home visiting allows interventions to be tailored to the specific needs of the family and provides therapists with the opportunity to assess and address other risk factors such as substance abuse, poor parental mental health and violence in the home (Gomby, 2005). Characteristics that contribute to an effective home visiting programme include internal consistency (adherence to the curriculum), a collaborative approach when working with parents, well trained and well supervised therapists, close relationship with other services, and low caseloads (Daro, 2006; Gomby, 2005).

In spite of the growing popularity of home visiting programmes, reviews report mixed results (Daro, 2006; Gomby, 2005). There are only a few programmes that have demonstrated long-term benefits for parents and young children (Avellar, Paulsell, Sama-Miller, & Del Grosso, 2012; Fergusson, Boden, & Horwood, 2013; Kendrick et al., 2000). The diverse results of home visiting programmes, in general, give some indication of how difficult it is to change parenting practices once dysfunctional patterns have become the established norm for the family (Donelan-McCall et al., 2009; Gomby, 2005) and such programmes require skilled therapists. These factors suggest that combining a home visiting programme with an evidence-based parenting programme may improve outcomes.

Current Study

The motivation to carry out this study arose from my 15 years' experience of delivering the Incredible Years[®] programme and seeing a small group of participants who did not respond well. It is these children who remain vulnerable to poorer outcomes later in life. At the same time, the New Zealand Government had a focus on improving outcomes for young children with conduct problems and were encouraging the development of interagency collaboration to provide extra support for the most vulnerable families. I undertook to develop a home visiting enhancement delivered in conjunction with the Incredible Years[®] parent programme that would achieve good results in terms of child behaviour. My hypothesis was that the addition of a structured Home Parent Support (HPS) intervention would result in better outcomes for families most at risk of poor treatment response, and the percentage of children with post-treatment scores in the clinical range would decrease. The current study was designed to evaluate this intervention using a randomised controlled trial (RCT) design.

Thesis Outline

Chapter 1 provides a summary of conduct problems in young children, effective treatment programmes and the need for enhancement interventions for families with additional risk factors for poor response.

Chapter 2 is a systematic review and meta-analysis of studies evaluating the efficacy of adding an enhancement intervention to a standard parent training programme. This review followed the PRISMA statement (Liberati et al., 2009) and was undertaken to examine the characteristics of effective enhancement interventions for improving child behaviour outcomes.

Chapter 3 provides background and history of the development of the Incredible Years® Specialist Service that was established in the Infant Child and Adolescent Mental Health Service, Bay of Plenty District Health Board, Tauranga, New Zealand. This was the community setting for the current trial. This chapter also includes the steps taken to develop the HPS protocol, from initial design, consultation, pilot trial, evaluation and refinement. It outlines the core skills and requirements for HPS to be effective and implemented with fidelity.

Chapter 4 provides an outline of the study design following the CONSORT 2010 Statement (Schulz, Altman, & Moher, 2010). It includes methodological details (i.e. participant selection, setting, randomisation, measurements, outcomes, and data analysis) and the steps taken to ensure integrity of the research and the intervention.

Chapter 5 is the first of two results chapters. This chapter presents the results of quantitative data analysis of adding a home visiting intervention alongside the IYP programme to enhance outcomes for vulnerable families. It gives detailed description of the statistical analysis, demographic characteristics of participants, and the results of primary and secondary outcomes in terms of child behaviour. Other factors explored were retention and engagement, ethnicity and mental health, parent satisfaction and confidence, and the impact of being part of the research trial. This chapter concludes with a summary of main findings.

Chapter 6 is a qualitative analysis of parents' experience as they journeyed through the treatment. It gives a voice to families by capturing their narratives and the meaning they gave to their experiences. It presents the themes generated from pre-treatment data and those generated from post and follow-up data. This section highlighted the loneliness and sense of isolation and helplessness that many parents of children with conduct problems felt at pre-

treatment and how this changed over the course of the treatment. Parents' comments and reflections were compared between the two treatment groups.

Chapter 7 discusses the qualitative and quantitative results of adding HPS to IYP. It highlights the importance of early intervention, using an evidence-based parent programme and providing additional support in the home for the most vulnerable families in order to improve outcomes.

Chapter 8 is the final chapter and provides a discussion of the strengths and weaknesses of this trial with suggestions for future research. This chapter concludes with a summary of the main findings and places this research in the context of the literature currently available on treatments that improve outcomes for the most vulnerable families. It highlights the gap that this research addresses and identifies some implications for service providers and policy makers.

Chapter 2: Literature Review

The aim of this chapter was to conduct a systematic review and meta-analysis of the efficacy of adding an enhancement intervention to a standard parent training programme to improve child problem behaviour, and to examine whether the type of enhancement intervention modified the overall intervention effect.

Interventions for Treating Conduct Problems

Research has indicated that parents are agents of change in child behaviour and that improvement in parenting skill appears to be a key mechanism of such change (Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004; Gardner, Burton, & Klimes, 2006; Hutchings, Bywater, Daley, et al., 2007). As a result, numerous parent training programmes have emerged, many of which have proven efficacy for addressing child conduct problems (Furlong et al., 2013; Kaminski et al., 2008) and are cost effective (Charles, Bywater, & Edwards, 2011). However, even with robust parent training programmes, not all families respond equally (Chronis et al., 2004; Webster-Stratton et al., 2011). Research shows that up to one third of families still have significant child behaviour problems immediately after treatment and this is a predictor of poorer outcomes in the long-term (Reyno & McGrath, 2006; Scott & Dadds, 2009; Webster-Stratton et al., 2011). The families who are most vulnerable to poor response to treatment often have additional parental risk factors such as depression or substance abuse (Gelfand & Teti, 1990; Goodman et al., 2011; Lovejoy, Graczyk, O'Hare, & Neuman, 2000), low self-efficacy, and punitive parenting practices (Beauchaine et al., 2005). These factors affect their ability to remain engaged in programmes, and to implement new skills to change patterns of behaviour (Bagner & Graziano, 2012). It was postulated that the provision of additional support for these parents while they attend a training programme might improve engagement and outcomes.

There is little research to date on the value of adding an enhancement to an evidence-based parent training programme. One review considered enhancement interventions for children with Attention Deficit Hyperactivity Disorder (ADHD) (Chronis et al., 2004) and found that, compared with standard parent training programmes, there were significant benefits for those who also received an enhancement intervention. They concluded that more support was needed to improve outcomes for non-responders, stating this was “of utmost clinical importance” (Chronis et al., 2004, p. 19).

However, this review was relevant only to ADHD, and a review is needed to synthesise the trial evidence for children with conduct problems more generally. It is also important to clearly describe the types of enhancements that are being undertaken and investigate whether these types of enhancements influence treatment effect. This literature review was needed to give direction to implementation into clinical practice and what needs further evaluation.

Methods

Eligibility criteria

Eligible studies included those with interventions to enhance the effect of a standard parent training programme where the main focus of the enhancement was improving parenting skills (rather than teacher or child skills) as a means of addressing child problem behaviour. Studies that were a RCT or cluster RCT, and published after 1990, were eligible. The enhanced interventions had to be for families where parents rated child behaviour as challenging and the age range of the target child population included 3- to 7-year-olds. Studies where the comparison was with a standard parent training programme were included; studies with waitlist or no treatment control groups, or compared with other interventions, were excluded because the focus of my work was on the enhancement of an existing effective parenting programme.

Information sources

Studies were identified from searches using EMBASE, MEDLINE, PsycINFO, and ERIC from 1990 to March 2015. Searches were also carried out in BioMed Central Trials Register and the World Health Organization Clinical Trials Search Portal. Additional articles were identified from secondary searches of included articles and previous reviews.

Search

The titles, abstracts and index terms were searched using combinations of relevant keywords from four broad categories: Behaviour problems (conduct, antisocial, oppositional, aggressive, non-compliant, defiant, disruptive, attention deficit hyperactive); Parenting (education, enhancements, strategies); Risk factors (retention, treatment dropout, adherence, compliance, engagement, poor treatment outcomes); Trials (randomised controlled trials, clinical trials, controlled trials) (see Appendix A for search strategy).

Study selection

The study selection is illustrated in Figure 1. There were 1,482 records identified from the search strategy, duplicates were removed, and I screened all titles and abstracts and excluded those studies that clearly did not meet inclusion criteria. Full text articles of those studies

where title and abstract indicated that they might meet inclusion criteria were obtained. An independent clinician (SH) and I independently examined these full text articles against the inclusion and exclusion criteria and additional studies were excluded. In addition, my PhD supervisor arbitrated and resolved any difference of opinion.

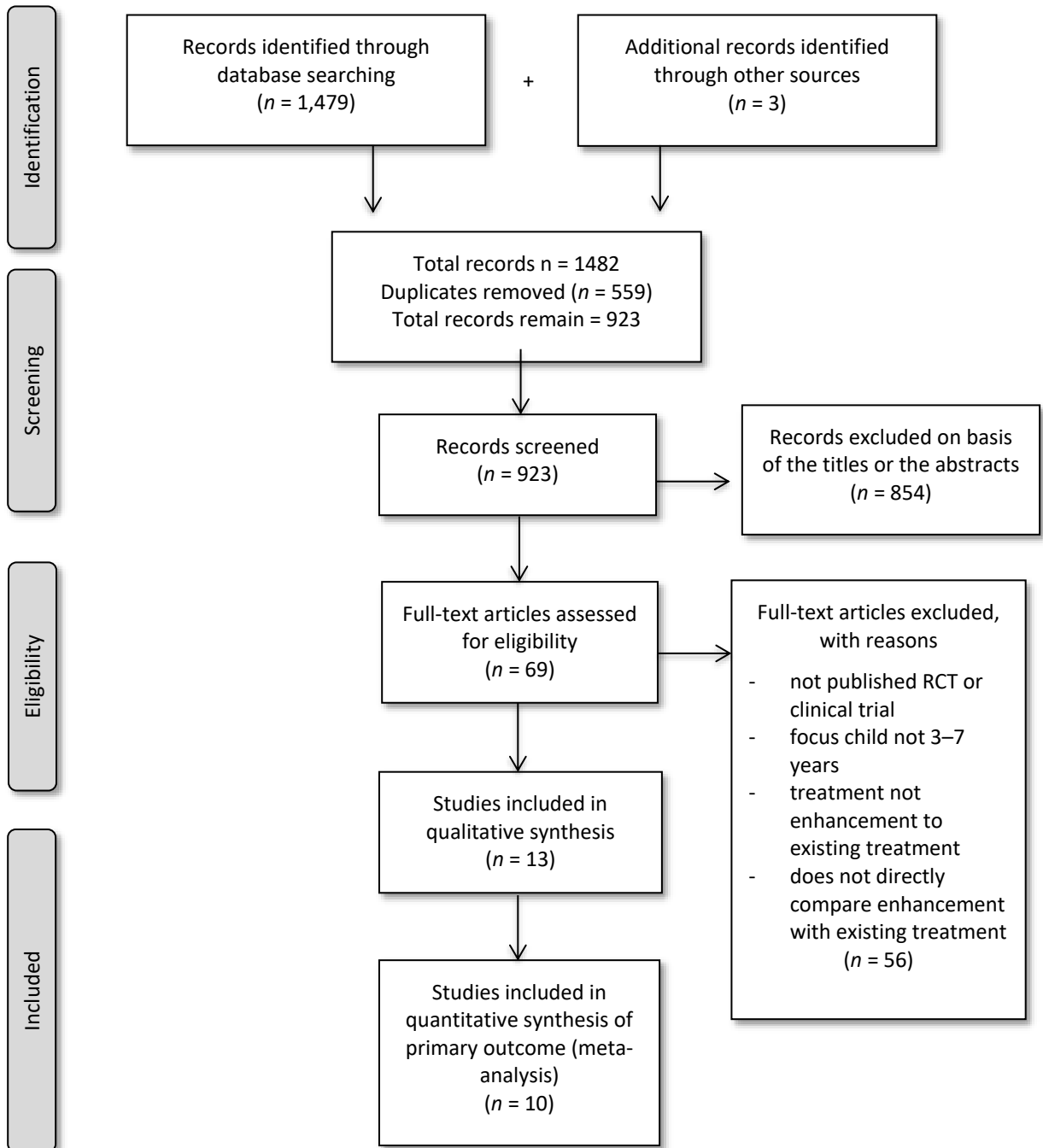


Figure 1. PRISMA flow diagram

Studies included in the systematic review were tabulated and data extracted. Studies were labeled at the trial level with the first author and date. For one trial there were two publications from which data were extracted. David, David, and Dobrea (2014) had child outcomes and David (2014) had parent outcomes. Three studies did not have data of the

primary outcome available and could not be included in meta-analysis (Kazdin & Whitley, 2003; Nock & Kazdin, 2005; Prinz & Miller, 1994). The remaining 10 studies were included in meta-analysis.

Outcomes and measurements

The primary outcome was improvement in the intensity of problem behaviour as reported by the parent post-intervention. Measures included the Eyberg Child Behavior Inventory, the Iowa Conners, the General Maladaptive Behavior Index, and the Achenbach Child Behavior Check List. Parent ratings of child problem behaviour were used rather than other ratings (e.g., teacher), as studies were included on the basis of parental perceptions of child behaviour.

The review's secondary outcomes were child problem behaviour at follow-up (measured as above) and acceptability of the intervention, measured by the dropout rate during intervention. This was a proxy measure on the basis that acceptability is likely to increase attendance. Where studies reported on those who did not complete post-intervention assessment but did not report on dropout, these data were included as a dropout. Other secondary outcomes—parenting skill, parental mental health and stress, and parent satisfaction—were measured qualitatively.

Data were not available or not in a form that could be used from three studies, namely Durand (2013), Kazdin (2003) and Webster-Stratton (1994). All three authors responded to requests for additional information, but Kazdin (2003) was not able to supply relevant data.

Data extraction

Information about demographic characteristics of the sample and the target population was extracted. Details of the enhancement intervention and the standard parent training programme were extracted from the included studies, as were data for the primary outcome (child problem behaviour), and secondary outcomes (dropout, parenting skill, parental mental health and stress, and parental satisfaction) and risk of bias data. The independent clinician (SH) and I gathered these and discrepancies were decided by agreement after reviewing the full text together.

Assessment of risk of bias

Risk of bias was based on Cochrane Collaboration methodology (Higgins et al., 2011). Each study was examined across six domains including: 1) allocation concealment; 2) blinding of participants; 3) selective outcome reporting (specifically I assessed whether the authors identified and then reported on a primary outcome); 4) incomplete outcome data (I assessed

the percentage of missing data); 5) monitoring of treatment fidelity and integrity; and 6) whether the study authors were also the developers of the programme being tested.

Studies were rated low risk of bias in terms of allocation concealment and blinding if the description indicated adequate methods. I rated risk of bias as unclear if there was no description or inadequate description. For studies where blinding was not possible, this was stated as not possible.

Risk of bias was rated as high for the domain of missing data if 20% or more of the data were missing. In no case was it necessary to rate this domain as unclear as the information was provided in all included studies.

The risk of bias was described for the domain of selective outcome reporting in terms of whether there was a clear primary outcome or hypothesis stated, whether this was reported, and finally, whether all stated outcomes were reported on.

Integrity of delivery was described according to whether there was any measure of monitoring (e.g., taping, supervision, protocol adherence). Finally, I described whether or not the study authors were also the developers of the enhancement.

Meta-analysis

Review Manager (The Cochrane Collaboration, 2012) was used for all analyses. I combined results from each included trial to give an overall estimate of the intervention effect using random effects models. For the primary outcome and for problem behaviour at follow-up, I pooled data to calculate a standardised mean difference (*SMD*), with 95% confidence intervals for any enhancement intervention effect compared with standard parent training programmes. For the primary outcome I also undertook a sensitivity analysis to investigate the impact of dropout on the intervention effect (below 20% vs 20% or higher).

For dropout, I pooled data to calculate an Odds Ratio with 95% confidence intervals. For the other secondary outcomes, parental mental health, satisfaction and parenting skill, the measurement tools were very disparate, so I provided a description about whether specific domains were measured and whether or not there were differences between the enhanced intervention and standard parent programme group.

Heterogeneity

Heterogeneity was assessed as per the Cochrane Handbook's recommendations (Higgins & Green, 2011), rating I^2 values of 0 to 40%: might not be important; 30% to 60%: moderate heterogeneity; 50% to 90% substantial heterogeneity; 75% to 100%: considerable heterogeneity, and taking into account i) Magnitude and direction of effects and (ii) Strength

of evidence for heterogeneity (e.g., p value from the chi-square test, or a confidence interval for I^2), in addition to the I^2 value (Higgins, Thompson, Deeks, & Altman, 2003).

Subgroup analysis

Subgroup analysis allows investigation of whether the intervention effects vary according to the main focus of the enhancement intervention. Analysis of subgroups by the focus used in the enhancement intervention was undertaken according to three categories: 1) addressing parental stress/mental health/negative cognitions; 2) addressing parenting skills; and 3) addressing parental relationship/support.

The independent clinician (SH) and I independently read the descriptions of the enhancement interventions of each included study and coded them according to the type of enhancement intervention. My supervisor (SM) resolved discrepancies in this coding.

To investigate treatment effects in these different subgroups, the overlap of the confidence intervals of the summary estimates was considered. In addition, significant differences between subgroups were explored following the method of Borenstein and colleagues (2008) as implemented in RevMan 5.1 (The Cochrane Collaboration, 2012). The procedure involves undertaking a standard test for heterogeneity across subgroup results rather than across individual study results.

Results

Characteristics of included studies

There were 13 studies included in the review and all were RCTs. Characteristics of these studies are summarised in Table 1. Overall, the studies were relatively small with sample sizes ranging from 22 to 153 participants. There were a total of 1,108 participants from the 13 studies. Ten studies, with a total of 558 participants, contributed data to the meta-analysis of the primary outcome. This number is much smaller than the total participants recruited due to the high dropout rates and the exclusion of trial arms such as waitlist control or no treatment. Seven studies had a specific target population e.g., solo mothers, low-income parents, or couples. Recruitment strategies ranged from community advertising and invitation ($n = 7$), specialist referrals ($n = 5$), multiple gating ($n = 1$) and one study did not state their recruitment strategy. Nine studies (66%) were carried out in the USA, three in Australasia and one in Romania. Four studies collected follow-up data over a time period ranging between one to 12 months.

Table 1. Overview of selected studies

Study	Country	Sample size	Child age range (years)	Target population	Recruitment strategy
Chacko, 2009	USA	120	5–12	Solo mothers	Volunteer and referral
Chronis, 2006	USA	62	5–13	Parents of children with ADHD	Referral
David, 2014a	Romania	130	4–12	Not specified	Referral
Durand, 2013	USA	54	3–6	Both parents	Volunteer and referral
Ireland, 2003	Australia	37 couples	2–5	Couples in conflict over parenting	Volunteer
Jones, 2014	USA	22	3–8	Low-income	Volunteer
Kazdin, 2003	USA	127 children	6–14	Children with challenging behaviour	Referral
Nock, 2005	USA	76	2–12	Not specified	Referral
Prinz, 1994	USA	147	4–9	Parents of boys with aggressive behaviour	Referral
Salmon, 2014	New Zealand	42	3–6	Not specified	Volunteer
Sanders, 2000	Australia	153	3	Low-income areas of Brisbane	Volunteer
Webster-Stratton, 1990	USA	43	3–8	Not specified	Not reported
Webster-Stratton, 1994	USA	78	3–8	Parents of children with diagnosis of ODD or CD or both	Volunteer and referral

Note. Recruitment strategy: Volunteer, those who responded to community outreach, media advertising, flyers, word of mouth; Referral, an agency was involved in referral e.g., school clinic. ADHD = Attention Deficit Hyperactivity Disorder; ODD = Oppositional Defiant Disorder; CD = Conduct Disorder.

Characteristics of enhancements

Characteristics of enhancement interventions are summarised in Table 2. Most enhancement interventions ($n = 9$) were short term. Of these, one enhancement intervention added two support sessions with a therapist, another had two sessions to address marital relationship issues, and seven studies modified the standard parent training programme content to include additional material and did not add extra sessions. The modified content addressed specific issues e.g., an enhanced intake session to address barriers to attending the programme, to improve emotional regulation skills, to address negative cognition and other parental concerns, to increase motivation, to increase use of emotional language, and to improve partner/social support. The remaining four enhancements included additional sessions, which focused on i) problem solving to address life stressors (five sessions) (Kazdin & Whitley, 2003) ii) using a smart phone application to increase uptake of new skills (eight additional contacts via text messages and video) (D. Jones, 2014), iii) maternal depression and anxiety (12 group sessions) (Chronis, Gamble, Roberts, & Pelham Jr, 2006), and iv) personal self-control, communication skills, self-care and problem solving skills (14 group sessions) (Webster-Stratton, 1994) (see Table 2).

Table 2. Characteristics of enhancement

Study	Name of programme	Focus of enhancement	Number of extra sessions and time frame delivered	Individual or group	Home visiting (Y/N)
Chacko, 2009	Strategies to Enhance Positive Parenting (STEPP)	Barriers to attend, stressed single mothers, maladaptive cognitions, depression, social support, and life stressors	0 Content incorporated into standard programme	Group	N
Chronis, 2006	“Maternal Stress and Coping Group” a modified version of CWDC	To improve maternal functioning in terms of depressive symptoms, anxiety, self-esteem, perceived stress, and cognitions about child behaviour	12 Weekly sessions (length in minutes not clear), delivered after the standard programme	Group	N
David, 2014	The Rational Positive Parenting (RPP) program (Enhanced program)	Parents in the Enhanced program received the Standard RPP programme well as integrating an emotion-regulation strategies module based on functional and positive reappraisal strategies	0 Content incorporated into standard programme	Group	N
Durand, 2013	Positive Family Intervention (PFI)	Improving parental optimism	0 Content incorporated into standard programme	Individual	N
Ireland, 2003	Enhanced Group Triple P	To encourage partners to support each other as a team by providing active skills training in communication skills; giving and receiving constructive feedback; holding casual conversations; supporting each other when problems occur; holding problem solving discussions; and improving relationship happiness	2 Sessions of 90 minutes. Not clear when these occurred	Group	N
Jones, 2014	Technology enhanced (TE-HNC)	Increasing engagement using smart phone app to push content to low-income client/caregiver	8 Phone contact during the standard programme	Individual	N
Kazdin, 2003	Parent Problem Solving (PSS) Skills Training	Problem solving skills focused on addressing everyday stressors for the parent	5 Sessions of 50 minutes interspersed over standard programme	Individual	N
Nock, 2005	PEI Participation Enhancement Intervention	Motivational enhancement techniques to increase parents’ participation in treatment, and to identify and overcome barriers to for changing parenting behaviour	0 Content incorporated into standard programme	Individual	N

Study	Name of programme	Focus of enhancement	Number of extra sessions and time frame delivered	Individual or group	Home visiting (Y/N)
Prinz, 1994	EFT: Enhanced Family Treatment	Consultation on a larger set of life problems as well as child management and parent-child interactions may improve overall engagement and reduce dropout	0 Content incorporated into standard programme	Individual	N
Salmon, 2014	Enhanced Triple P	Parents learning how to use emotion labels to prompt and coach their children to identify, express and manage their emotions	0 Content incorporated into standard programme	Group	N
Sanders, 2000	Enhanced Behavioural Family Intervention EBFI Triple P	Provided strategies to increase support from partners, families, or friends using brief behavioural communication skills training and strategies to help parents manage their own feelings of depression, anger, anxiety, and stress through brief cognitive therapy techniques	0 Content incorporated into standard programme	Individual	Y
Webster-Stratton, 1990	Individually administered Videotape Training Plus Therapist Consultation (IVMC)	Access to therapist for consultation during standard parent training plus 2 x 1-hour therapist sessions	2 Sessions of 60 minutes delivered in same time frame as standard programme	Individual	N
Webster-Stratton, 1994	ADVANCE	Train parents to cope with interpersonal distress through improved communication, problem solving, and self-control skills	14 Sessions of 2 hours delivered after the standard programme	Group	N

I did not formally assess whether individual or group delivery modified treatment effects. However, I noted that generally the format for delivery of the enhancement interventions followed the format of the standard parent training programme. Only one enhancement intervention included home visiting.

Risk of bias

Risk of bias across six domains is summarised in Table 3. For allocation concealment, all studies stated that a randomisation process was carried out. One study (Nock & Kazdin, 2005) was considered to have a low risk of bias, one study had a high-risk of bias (D. Jones, 2014), and all other studies were considered to be unclear in terms of risk of bias as they did not clearly state if or how the allocation was concealed.

Table 3. Risk of bias

Study	Allocation concealment	Blinding of parents	Selective reporting			Was intervention integrity/fidelity monitored? (Yes/No)	Missing data	Author is developer
			Did they specify a primary outcome or hypothesis?	Did they report on primary outcome?	Did they report on all measures?	Yes = they provided facilitator monitoring/or supervised/or taped delivery	High/Low % missing	
Chacko, 2009	Unclear “Single mothers were randomly assigned within semester to....”	Unclear	No	NA	Yes	Y Taping	Low 1.70%	Yes
Chronis, 2006	Unclear “Following this screening assessment, they were randomly assigned to...”	Unclear	No No clear primary outcomes but several hypotheses	No Not all outcomes were reported on	Yes	Yes Supervision	Low 17.7%	Unclear
David, 2014	Unclear “Parents qualifying for the study were randomly assigned to one of the three double-blinded study conditions”	Low ...assigned to one of the three double-blinded study conditions	Yes That the enhancement “will be associated with greater reductions in child externalizing syndromes...”	Yes	Yes	Yes Taping	Low 13.1%	Yes
Durand, 2013	Unclear “Parents were randomly assigned to two conditions by the clinical director, matching therapists to families based on their proximity and availability”	Unclear	Yes That the enhancement “would demonstrate a greater decrease in pessimism...”	Yes	Yes	Yes Taping	High 35.2%	Yes
Ireland, 2003	Unclear “families were screened via phone call... after families had selected a suitable group time, conditions were randomly allocated to these times”.	Unclear	Yes That the enhancement condition “would be associated with greater long-term improvements on measures of disruptive child behavior”	Yes	Yes	Yes Monitoring	Low 15.9%	Yes

Study	Allocation concealment	Blinding of parents	Selective reporting			Was intervention integrity/fidelity monitored? (Yes/No)	Missing data	Author is developer
			Did they specify a primary outcome or hypothesis?	Did they report on primary outcome?	Did they report on all measures?			
Jones, 2014	High “Using restricted random assignment to force equal sample sizes, Master’s-level therapists randomly assigned the remaining 22 eligible low-income families to the HNC or TE-HNC group”	Unclear	Yes That “the smart phone enhancement would boost HNC’s impact on child behavior...”	Yes	Yes	Yes Supervision	High/Low % missing High 31.8%	Yes
Kazdin, 2003	Unclear “Consecutive referrals of children were randomly assigned to receive or not to receive this latter intervention... Although assignment to conditions was random, a slightly greater percentage of cases was allocated in advance to be assigned to PPS rather than the no-PPS condition”	Unclear	Unclear	NA	Yes However, this was not by each treatment group. In addition, the scores given were summarised and reported as a therapeutic index change calculated using Z scores across a range of measures	Yes Video	High 34.2%	Yes
Nock, 2005	Low “Random assignment was conducted by the clinic director (Alan E. Kazdin who did not conduct the assessments) with a random numbers table using a blocking strategy	Low “Parents were aware of treatment condition for conduct problems but unaware of which condition they were in for the current study...”	Unclear Not a clear single outcome measure or hypothesis but a stated aim with three variables to increase 1. motivation 2. attendance and 3. adherence	Yes	Yes	Yes Taping and supervision	High 53.9%	Yes

Study	Allocation concealment	Blinding of parents	Selective reporting			Was intervention integrity/fidelity monitored? (Yes/No)	Missing data	Author is developer
			Did they specify a primary outcome or hypothesis?	Did they report on primary outcome?	Did they report on all measures?			
Prinz, 1994	Unclear “Families who met criteria and agreed to begin treatment were randomly assigned to.... using stratification on One- versus two parent household, socio economic status level and age of child...”	Unclear	Unclear Not clearly stated but implied	NA	No Not all scores reported for both groups. A family adversity index was calculated from pre-treatment data as a function of 7 dichotomous indices	Yes Taping	High 38.1%	Unclear
Salmon, 2014	Unclear “Families...were randomly assigned to ...”	Unclear	Yes That “the EETP group only would include more emotion elements in their reminiscing discussions with their children...”	Yes	High probability that authors have failed to report on total problem score on ECBI but reported intensity scores	Yes Monitoring and supervision	Low 14%	Yes
Sanders, 2000	Unclear “Families completed a 90-min semi-structured interview... prior to randomization to one of the four conditions”	Unclear	Unclear One hypothesis with two outcomes measures	Yes	Yes	Yes Video and checklist	High 20.3%	Yes
Webster-Stratton, 1990	Unclear “Once subjects were accepted for entry, they were randomly assigned to one of three conditions”	Unclear	Yes “...that IVMC treatment with personalised therapist attention and consultation would be superior to the other two conditions”	Yes	Yes	Yes Monitoring and taping	Low 9.6%	Yes

Study	Allocation concealment	Blinding of parents	Selective reporting			Was intervention integrity/fidelity monitored? (Yes/No)	Missing data	Author is developer
			Did they specify a primary outcome or hypothesis?	Did they report on primary outcome?	Did they report on all measures?	Yes = they provided facilitator monitoring/or supervised/or taped delivery	High/Low % missing	
Webster-Stratton, 1994	Unclear “families were randomly assigned to...”	Unclear	No Several hypotheses including communication, marital distress and child behaviour	Yes	Yes	Yes Treatment manual and taping	Low 8.9%	Yes

Note. HNC = Helping the Noncompliant Child. TE HCN = Technology Enhanced Helping the Noncompliant Child. PPS = Parent Problem Solving. EETP = Emotion Enhanced Triple P. EYCBI = Eyberg Child Behavior Inventory. IVM = Individual Video Modelling with Consultation.

Two studies had clear statements about blinding and were rated as low risk of bias (David et al., 2014; Nock & Kazdin, 2005), and the remaining studies had no or unclear statements and were rated as unclear risk of bias for blinding. Blinding of participants was potentially possible in some studies, but generally in these types of studies the content of the standard parent training programme and enhanced interventions are different and it is very difficult to blind participants.

In terms of selective reporting, studies that stated a hypothesis with multiple variables were not rated as specifying a primary outcome. The hypothesis was not stated in two studies (Chacko et al., 2009; Chronis et al., 2006), and in five studies the primary hypothesis was not clearly stated (Kazdin & Whitley, 2003; Nock & Kazdin, 2005; Prinz & Miller, 1994; Sanders, Markie-Dadds, Tully, & Bor, 2000; Webster-Stratton, 1994). The remaining six studies clearly stated the primary hypothesis and reported on the primary outcome variable. Ten studies reported on all the stated outcome measures by group (Chacko et al., 2009; Chronis et al., 2006; David et al., 2014; Durand et al., 2013; Ireland, Sanders, & Markie-Dadds, 2003; D. Jones et al., 2014; Nock & Kazdin, 2005; Sanders et al., 2000; Webster-Stratton, 1990a, 1994).

The percentage of missing data had a wide range (1.7% to 53.9%) and dropout rates were generally high, ranging between 2.5% and 53.9%. Three studies had dropout rates under 10% (Chacko et al., 2009; Webster-Stratton, 1990a, 1994). Six studies included data only for those who completed a defined minimum number of sessions (David et al., 2014; Durand et al., 2013; Ireland et al., 2003; Kazdin & Whitley, 2003; Nock & Kazdin, 2005; Prinz & Miller, 1994); of particular note is one study, Prinz (1994) that included data only for those who completed the entire protocol, therefore dropout was high. Other studies (D. Jones et al., 2014; Sanders et al., 2000) included data from those who completed pre and post measures with no specified attendance required, and five studies did not clearly define completion (Chacko et al., 2009; Chronis et al., 2006; Prinz & Miller, 1994; Webster-Stratton, 1990a, 1994). Overall, five studies had over 20% of data missing.

I examined whether intervention integrity/fidelity was monitored and all 13 studies had some form of monitoring of the enhancement intervention. All studies were considered low risk of bias for integrity of delivery.

Finally, risk of bias was measured in terms of whether the study author was also the intervention developer. Of the 13 enhancement interventions that were tested, the authors developed 11, one was unclear and in one study the author did not develop the intervention

(see Table 3). None of the authors declared a conflict of interest in the original article and there was one post-publication erratum published with a disclaimer (Salmon, Dittman, Sanders, Burson, & Hammington, 2014).

Effects of intervention on child behaviour

There was no evidence of effect on child behaviour ($SMD -0.08$ 95% CI $[-0.34, 0.17]$) (see Figure 2). There was moderate heterogeneity $I^2 = 52%$ and visual inspection of the plot showed the direction of effects across studies varied with some effect estimates favouring the enhancement and some favouring the standard intervention.

Subgroup analysis showed those enhancement interventions that addressed parental stress, mental health and/or negative cognition had better outcomes in terms of child problem behaviour compared with those in the standard groups, although this was not significant. Heterogeneity was increased in this subgroup ($I^2 = 64%$). Studies that addressed parenting skill did not have better outcomes compared with standard parent group, nor did studies that addressed parental relationship and for these subgroups the heterogeneity was reduced ($I^2 = 0%$). The overall effect size was not significantly modified by the focus of the enhancement intervention ($\chi^2 = 3.67$; $df = 2$; $p = .16$) (see Figure 2).

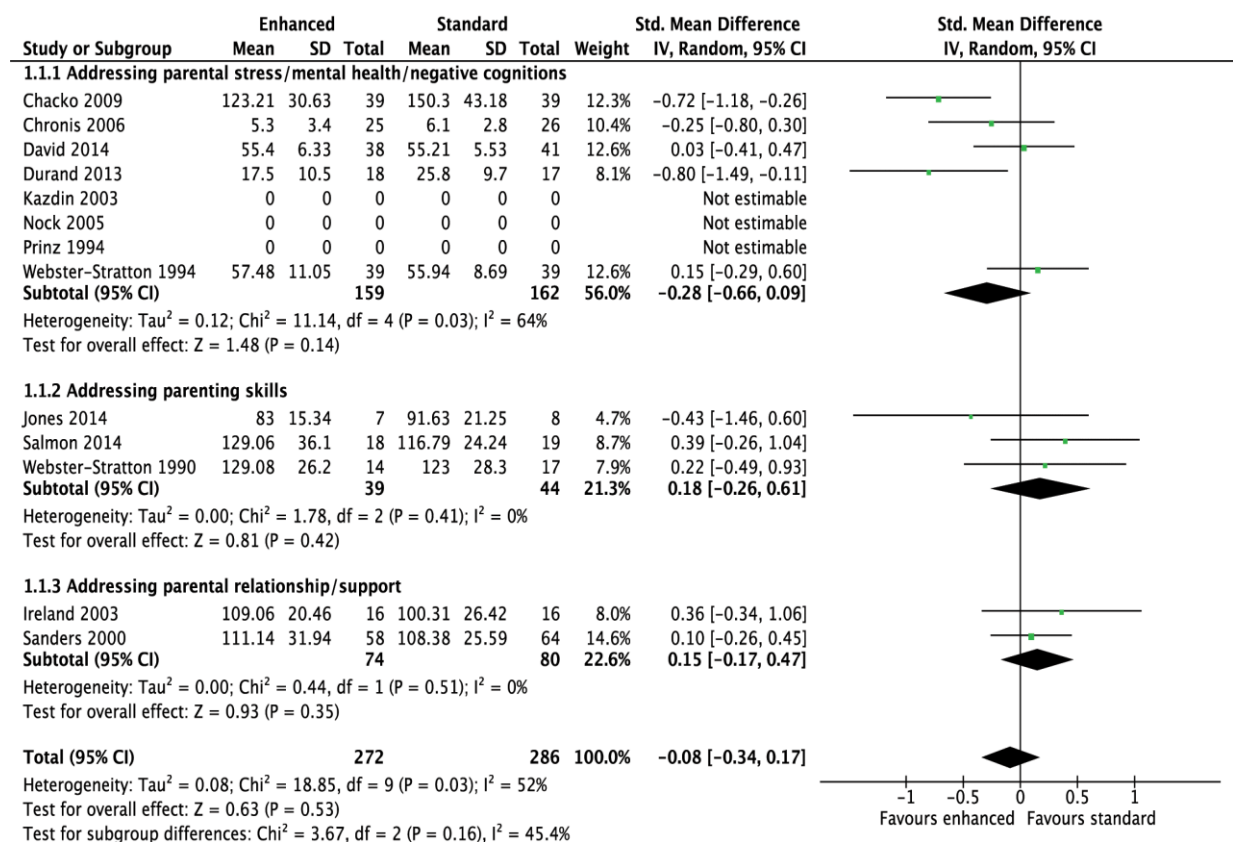


Figure 2. Child behaviour outcomes

The effectiveness of the enhancement at follow-up was measured in only four studies and the overall effect size favoured the standard intervention but this was not significant ($SMD = 0.15$; 95% CI [-0.10, 0.40], $I^2 = 0\%$) (see Figure 3).

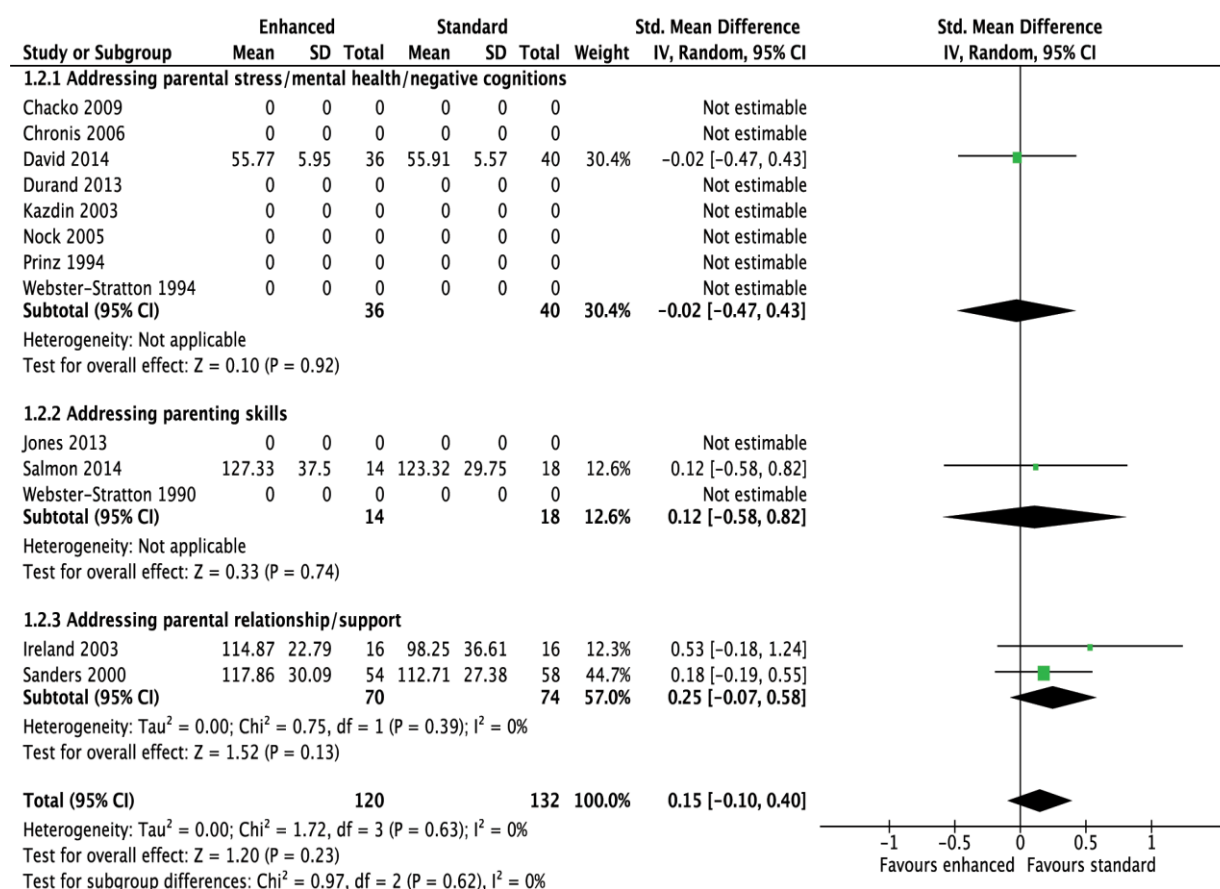


Figure 3. Follow-up data

Dropouts

There were 10 studies that measured dropout and overall, the enhancement interventions did not improve dropout rates compared with standard parent training programmes ($SMD 0.90$; 95% CI [0.55, 1.48]) (see Figure 4).

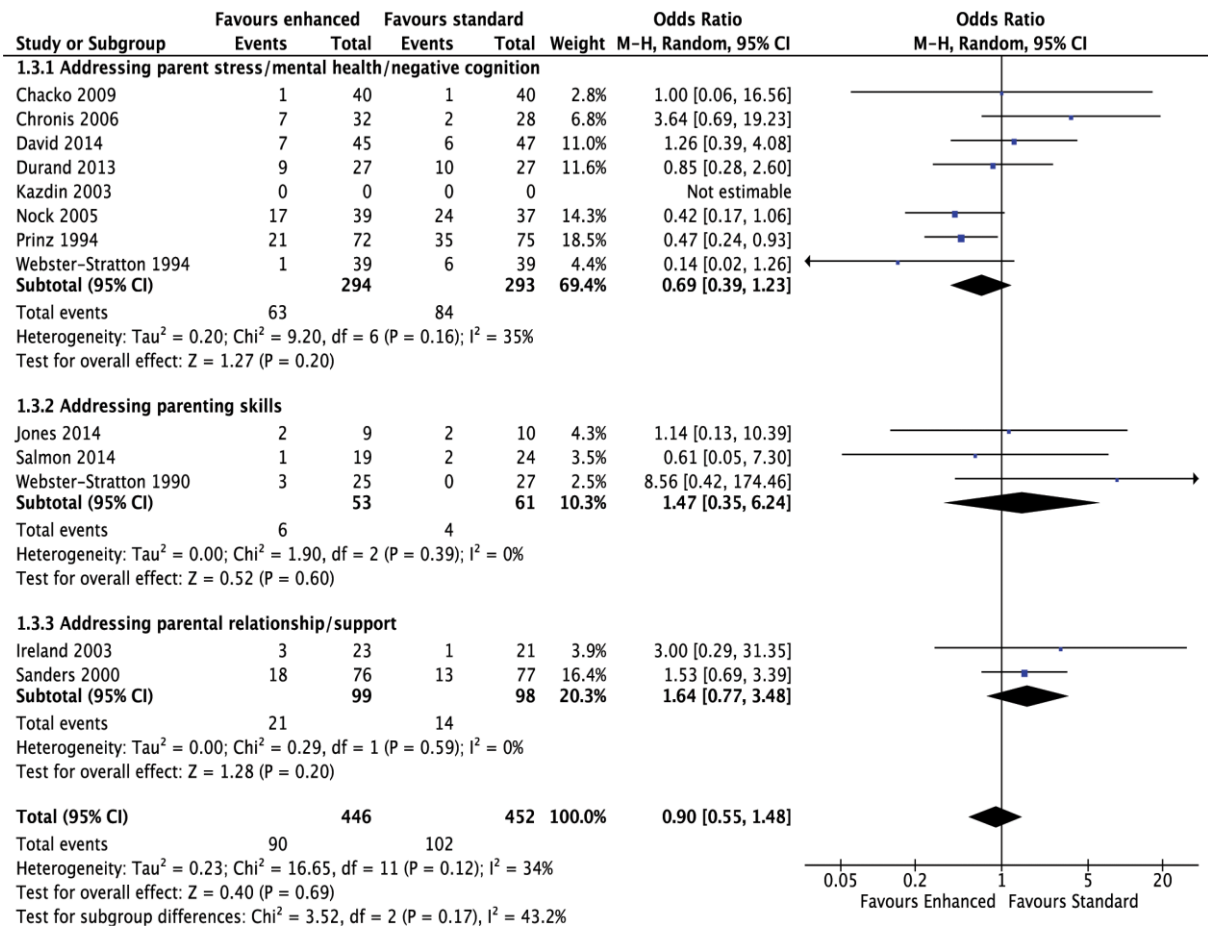


Figure 4. Dropout data

Effects of intervention on parental mental health

Parental mental health outcomes are presented in Table 4. Eleven of the 13 studies measured some domain relevant to parental mental health or stress or negative cognition using a range of measures. One study did not report on these outcomes (Prinz & Miller, 1994), seven studies reported no significant difference between the groups (David et al., 2014; Durand et al., 2013; Ireland et al., 2003; Salmon et al., 2014; Sanders et al., 2000; Webster-Stratton, 1990a, 1994). One reported significantly reduced depression post-treatment for those in the enhancement intervention compared with those in the standard parent training group but this difference was no longer significant in intention-to-treat analysis (Chronis et al., 2006). Chacko et al. (2009) showed parental stress was improved immediately after the intervention for those in the enhancement intervention group compared with those in the standard parent training group but this difference was no longer significant at follow-up, and Kazdin and Whitley (2003) showed a significant difference in depression and stress favouring the enhancement intervention, but there was no follow-up carried out. Overall, the enhancement intervention did not improve parental mental health in the long-term.

Table 4. Other outcomes

Study	Outcome	Measured (Y/N)	Reported (Y/N)	Tested for statistical difference between groups (Y/N)	Found statistical difference (Yes/No)
Chacko, 2009	Mental Health	Y	Y	Y	Yes, for stress but gains not maintained at follow-up
	Satisfaction	Y	Y	Y	Yes, favoured enhancement
	Parenting Skill	Y	Y	Y	Yes, favoured enhanced group
Chronis, 2006	Mental Health	Y	Y	Y	Yes for depression, but difference was no longer significant in ITT analysis
	Satisfaction	Y	Y	Unclear	Unclear
	Parenting Skill	N			
David, 2014a	Mental Health	Y	Y		Not significant at post but was significant for depression at one-month follow-up ¹
	Satisfaction	N			
	Parenting Skill	Y	Y	N	No
Durand, 2013	Mental Health	Y	Y	Y	No
	Satisfaction	Y	Y	Y	Unclear
	Parenting Skill	N			

Effects of intervention on parent satisfaction

Consumer satisfaction was measured in nine of the 13 studies, but by varying measures that were not necessarily validated. Two studies reported that the enhanced group had significantly better satisfaction scores compared with those receiving a standard intervention (Chacko et al., 2009; Webster-Stratton, 1994), Three studies reported no significant difference between the groups (Ireland et al., 2003; Salmon et al., 2014; Webster-Stratton, 1990a) and in four studies the reporting was unclear. Overall, there was no clear benefit on consumer satisfaction between those receiving an enhanced parenting intervention compared with those receiving a standard parenting programme.

Effects of intervention on parenting skill

Parenting skill was measured in seven of the 13 studies and results were reported in all of these studies. Two studies (Chacko et al., 2009; Webster-Stratton, 1994) reported statistically different levels of parenting skill favouring the enhancement intervention group and the remaining five studies reported no difference between the groups.

Summary

This review identified 13 studies that compared the effect of adding an enhanced intervention to a standard parent training programme and the overall result showed no additional benefit.

¹ Reported in secondary paper (David, 2014b).

There are four main findings. First, the primary and secondary outcomes showed no overall benefit in terms of the intensity of child problem behaviour at post-treatment, or at follow-up. Second, the subgroup analysis showed that those enhanced interventions that addressed parental stress, mental health, and negative cognition appeared to have some benefit for child problem behaviour and may be promising in terms of further research. Third, dropout rate was generally high. Finally, in terms of risk of bias, the studies generally had poor reporting of allocation concealment, blinding was not possible in many studies and only two studies made a clear statement about blinding; less than half of the studies stated a primary hypothesis, two thirds of the studies reported on a primary outcome measure, and all studies had measures to ensure fidelity of treatment. Over a third of studies had more than 20% of data missing. Overall, in no study was the risk of bias low in all domains and in fact the risk of bias was unclear for most domains in most studies.

The lack of efficacy from adding an enhancement could reflect the limitations of this review and the limitations of the studies included. There were few studies eligible for this review and these were characterised by small sample size and methodological limitations (e.g., how dropout scores were managed and clear completion requirement). It should be noted that the recruitment strategy in many studies meant that participants might not reflect those who were most vulnerable. Participants were largely recruited via voluntary community advertising and were therefore likely to be more motivated and to have less severe child behavioural problems than participants recruited from clinical sources. Severity of initial problem is a factor in predicting effectiveness of parent training, with higher effect sizes for those families with more severe initial problems (Leijten, Raaijmakers, de Castro, & Matthys, 2013). For participants with less severe problems, attending a standard parent training programme may reach a “ceiling” where the improvements in child problem behaviour produced by the standard treatment alone leaves little room for further improvement from the enhancement. Enhancement interventions may show more benefit for targeted clinical populations.

Studies that showed some promise were those that focused on psychosocial stressors to enhance outcomes. This approach is supported by Reyno and McGrath (2006) who concluded in their review of effective parent training that “enhancements to parent training addressing parental distress and mental health concerns may positively influence treatment outcomes” (p. 9). Parental mental health is a known factor in moderating outcomes in parent programmes (Beauchaine et al., 2005). In particular, research has identified maternal depression to be associated with adverse child outcomes showing that children with depressed mothers have significantly higher rates of internalising and externalising problems compared with children

whose mothers are not depressed (Goodman et al., 2011). Parents suffering from depression and stress have reduced capacity to parent effectively as they often feel overwhelmed and respond inconsistently, thus unwittingly falling into a coercive and dysfunctional pattern of parenting. Durand and colleagues (2013) found the best predictor of future child behaviour is parental optimism/pessimism.

The mode of delivery of an enhanced intervention may be a factor to consider in future. I did not evaluate the difference between group, individual or home visiting as modes of delivery, but those interventions in this review that included some individual contact with parents showed promise in terms of outcomes compared with standard parent training alone, e.g., an enhanced individualised intake (Chacko et al., 2009), an individual standard parent training (Durand et al., 2013), and weekly smart phone contact (D. Jones et al., 2014).

Of the enhancements that were delivered to participants individually, only one used home visiting, despite the literature that identifies benefits of this as a mode of delivery. These benefits include the ability to tailor the intervention to the family's needs, taking the intervention to the family, and providing therapist insights into other systemic issues in the home environment (Gomby, 2005). Other studies using home visiting have reported significant decreases in child behaviour problems and parenting stress for disadvantaged families (Fergusson, Boden, et al., 2013; Leung, Tsang, & Heung, 2013), and improvements in the parenting skill (Kendrick et al., 2000). Additionally, parents have noticed other benefits of home visiting that include more harmonious relationships within the whole family, increased parental confidence, and a greater ability to address dysfunctional parental behaviours (Lees & Fergusson, 2015).

While home visiting has benefits, this is resource intensive and would not be economical on a large scale over a long period of time. There are also recognised benefits from the group format such as social support and collaborative learning experience that are not experienced in individual treatment (Barlow, Coren, & Stewart-Brown, 2002; Bunting, 2004; Chronis et al., 2004; Furlong et al., 2013). Of the promising enhancement programmes in this review, two were individual (Durand et al., 2013; D. Jones et al., 2014), and two were group-based (Chacko et al., 2009; Chronis et al., 2004), which shows that both have benefits and it is not clear if one is better than the other.

Even though this review found no additional benefit for enhanced interventions, the seriousness of child conduct problems justifies further investigation to enhance outcomes. Improving outcomes for the most vulnerable families is complex as there are a wide range of

factors across many domains that impact on families, such as mental health, poor social skills, punitive parenting practices, negative cognition, and drug and alcohol addiction, to name a few (Reyno & McGrath, 2006). There is no simple solution but this population, and the wider community, will benefit from further research to reduce the distress caused by increasing levels and frequency of conduct problems in young children.

The development of future enhancement interventions can be guided by previous research into effective components of parenting programmes. For example, Kaminski and colleagues (2008) identified that promoting positive interactions by parents with their children, and reinforcing key parenting skills with practice and consistency were critical components in an effective programme. Others found that including enhancements that went beyond improving parents' child management skills did not enhance outcomes, as parents have limited capacity to change multiple areas; instead, providing a focus on one skill area is more likely to achieve results (Lundahl, Risser, & Lovejoy, 2006). Dose effect has been identified as a key factor in effectiveness with high-risk families needing more contact over a longer time to make sustained change (Baydar et al., 2003; Peacock et al., 2013). Additionally, parents need to be the focus of the intervention, because including children in their own therapy separate from parenting training did not enhance outcomes, as this shifts the focus of behaviour problems to belong with the child rather than with the parents (Lundahl et al., 2006). Other reviews support these findings and conclude that home visiting should be part of a larger intervention strategy, have a higher dose over a longer period, use trained home visiting therapists and focus on one issue rather than trying to remedy multiple problems (Gomby, 2005; Peacock et al., 2013).

As a way forward, I concluded that combining an evidence-based standard group parent training programme with an individualised home visiting enhancement delivered by trained therapists, to support the families of children with severe behaviour problems would be worth investigating. This combination has the benefits of the group experience and personalised flexible home support and such a programme has not yet been evaluated.

Limitations and strengths of this review

There are a number of limitations of this review that need to be considered. Firstly, the number of studies included in the analysis was small. I limited studies to RCT or controlled trials as this is the gold standard for measuring effectiveness of an intervention (Akobeng, 2005), but as such I may have missed some studies evaluating an enhancement intervention. Many of the studies were small and underpowered. These studies are vulnerable to outliers and randomisation does not always equalise the group differences (Coyne & Kwakkenbos,

2013). The lack of studies with follow-up meant there was no measure of long-term effects. A small sample meant the overall heterogeneity was moderate and the direction of effects was often disparate. There were a small number of studies included in each subgroup, which limits the power of this sub-analysis. My analysis did not include assessment of mode of delivery (individual or group), and did not consider the dose effect. Previous studies have shown a direct relationship with dose and effect size (Baydar et al., 2003; Peacock et al., 2013).

In general, the reporting of the randomisation process and blinding of parents was poor, making the assessment of bias unclear at best. The high rate of dropout in some studies was concerning as this may have influenced outcomes. Some studies' high dropout rates may be due to a methodological issue, such as including data only for participants who completed the course and provided post-treatment data. This is important clinically because we need to know if the intervention is acceptable to parents, and what the effects would be if they did stay in treatment. Finally, most of the authors were also the programme developer, and none of them declared a conflict of interest. This is a major concern as developers are at risk of over-reporting positive outcomes, particularly when there is the complication of financial gain from this (Petrosino & Soydan, 2005; Wilson et al., 2012). The findings of this review have to be considered in the light of the risk of bias found in each study.

To my knowledge, no review or meta-analysis addressing benefits of enhanced interventions to standard parent programmes has been carried out before. I did not identify any previous subgroup analysis to examine whether specific types of enhancements could be more effective than others.

Conclusion

I have not found data to support the benefits of adding an enhancement to standard parent programmes but none to date has examined the benefits of adding home visiting to a standard group parent programme despite the case that can be made for this. Nor has "dose" been considered as a factor affecting change. While I have identified that enhancement programmes with a focus on parental stress, mental health, and negative cognition may hold some promise, this needs to be further evaluated. My recommendation was that further study be carried out using a combination of a group parent programme with additional support provided in a home visiting enhancement to address individual and systemic barriers to change. This trial would need to ensure the risk of bias is reduced in all six domains and, while blinding may not be possible, having group leaders independent from those providing the home visiting enhancement may reduce potential risk of bias.

The next chapter outlines the development of such an enhancement intervention. HPS was developed to improve outcomes for vulnerable families while they attended the Incredible Years[®] parent programme.

Chapter 3: Development of the Home Parent Support Intervention Incredible Years[®] Specialist Service and Home Parent Support

This chapter outlines the background to the development of a home visiting intervention alongside the Incredible Years[®] parent programme. This was an interagency collaborative approach to address the growing incidence of conduct problems in young children. The interagency response saw the Ministry of Education (MOE) adopt the Incredible Years[®] parent and teacher programmes as part of their nationwide *Positive behaviour for learning action plan* and join with the Ministry of Health (MOH) and non-government organisations (NGOs) to deliver IYP programmes in the community (Ministry of Education, 2011). The steps taken to develop the enhancement intervention are outlined along with the core components for HPS to be delivered with fidelity.

Background to Addressing Conduct Problems in New Zealand

In recent years, the New Zealand Government has been concerned about the increasing incidence and severity of conduct problems in young people. An expert advisory group on conduct problems recommended an interagency response to intervene early in the life of the child using an evidence-based programme, and to provide extra support for the most vulnerable families (Church et al., 2007). Gluckman (2011) and Old et al., (1999) recommend the best intervention for conduct behaviour is to improve access to community-based parenting programmes with additional home support for the most needy and implement these interventions with fidelity.

The Ministry of Social Development evaluated the effectiveness of IYP delivered within MOE and found evidence of behaviour change with moderate to large effect sizes and that benefits were similar for Māori (Sturrock et al., 2013). Follow-up evaluation confirmed long-term effectiveness of IYP with no reduction in the size of effects on most outcome measures (Sturrock et al., 2014). While evidence-based parent management programmes have good outcomes for most families, there are some families who have additional risk factors that make behaviour change more difficult (Reyno & McGrath, 2006; Webster-Stratton et al., 2011). These families need extra support to understand the concepts and principles of behaviour change, and to implement these new strategies in the home and to address barriers to change. The Incredible Years[®] Specialist Service was established by the Bay of Plenty District Health Board (BOPDHB) and MOE to improve access to IYP and support vulnerable

families in their homes to increase their uptake of parenting strategies while they attended the IYP group.

Background to Incredible Years® in New Zealand

The Infant, Child and Adolescent Mental Health Service (ICAMHS) in the BOPDHB was the first health service in New Zealand to introduce IYP as a treatment pathway for parents of children with conduct problems. IYP was first delivered and evaluated in BOPDHB in 2001, and results showed improvement in child behaviour and family functioning (Lees & Ronan, 2008) which reflected international outcomes (K. Jones et al., 2008; Kaminski et al., 2008; Webster-Stratton, 2000). In 2004, the University of Auckland sponsored the first training for Incredible Years® facilitators in New Zealand. Since then, there has been a rapid expansion of training and an increase in the number of agencies delivering Incredible Years® programmes in New Zealand (Anstiss, 2013). However, if the needs of the most vulnerable families were to be met, some form of enhancement was required.

Establishment of Incredible Years® Specialist Service

In response to government initiatives on addressing conduct problems, the Incredible Years® Specialist Service (IYSS) was established in the Bay of Plenty region as a pilot service, based in ICAMHS (Appendix B). IYSS is a small team (2 full time equivalents FTE) of experienced mental health workers who were also accredited IYP group leaders (Clinical Psychologist and Family Therapist/Counsellor), and 0.2 FTE Specialist Physicians (Child and Adolescent Psychiatrist and Developmental Paediatrician). The specification for IYSS was to provide a comprehensive interagency intervention to address conduct/antisocial behaviour and associated mental health problems in young children (Church et al., 2007). Key features included:

- Strengthening and supporting interagency response
- Bringing mental health expertise and capacity to a multi-agency team
- Strengthening interventions for Māori
- A focus on children aged 3–7 years and those with most severe conduct problems.

IYSS established a referral pathway and developed a database to manage all referrals for parents to attend the Incredible Years® parent programmes in the region. IYP groups delivered by MOE, NGOs and ICAMHS were coordinated by IYSS to ensure there was a range of delivery times and locations. Participants were then able to choose a parent group

that suited them in terms of venue, commencement date, and time of day, thus maximising access for families. A targeted enhancement programme was developed to improve the effectiveness of IYP.

Focus of enhancement interventions

A number of enhancements have been developed to improve effectiveness of parenting programmes but few have been rigorously evaluated or shown additional benefits for child behaviour over and above the original parent programme (see Chapter 2). Those that showed some benefit in terms of child problem behaviour addressed parental stress, mental health, and negative cognition (Chacko et al., 2009; Chronis et al., 2006; Durand et al., 2013) (see Chapter 2 for more details). The focus of the structured Home Parent Support (HPS) intervention was to address barriers to implementing the IYP strategies, and these were often associated with parental stress, low self-esteem, and poor self-efficacy. It was predicted that supporting parents to implement effective parenting strategies would result in improved child behaviour.

The format of enhancements found in the literature varied between individual, group, or home visiting. To my knowledge, there have been no enhancements that added an individual home visiting programme to a group-based parent programme. This combination could allow families to receive all the benefits of home visiting as well as the benefits associated with attending a group programme (e.g., experiential group learning, and socialisation, encouragement and validation from others). The benefits of a home visiting programme alone have been reported as including taking resources to the family, seeing the child in context, involving the whole family, having flexible sessions, benefiting more than one child, tailoring interventions to the needs of the family, providing opportunities to practise new skills, and giving therapists the opportunity to assess other risk factors such as substance abuse, parental mental health and violence in the home (Gomby, 2005). Combining a group-based parent programme with a home-based enhancement was expected to maximise the benefits of both formats.

Home Parent Support intervention

The enhancement intervention provided by IYSS was HPS. HPS therapists carried out an initial assessment with the family (Appendix C) and then made weekly visits to support parents in their home to understand the key IYP principles, to tailor strategies for their families, and to address barriers for implementation. HPS was provided by therapists who were trained mental health workers and accredited IYP facilitators (see later section on Core Skills). They were familiar with the detail of the IYP course content, key principles and

worked collaboratively with the parents in their home. They supported parents to implement the key parenting principles, practise new skills, and tailor strategies to their own circumstances. Therapists worked in different therapeutic modalities to build the parent-child relationship (focus on attachment), addressing negative cognitions (negative attributes), and coercive patterns of interaction (social learning). They also assessed barriers to change (motivational) and supported parents to access other appropriate health and education services such as Adult Mental Health Services, Income Support, Relationship Services, and Special Education Services. It was expected that this enhancement would help families with multiple-risk factors to stay engaged in IYP and to improve the uptake of effective parenting strategies.

Pilot evaluation HPS

In an open trial, the addition of HPS made a difference for most families with additional risk factors, participants reported high levels of satisfaction, and the retention rate was high at 92% (Lees & Fergusson, 2015). The high uptake and retention of HPS demonstrated that parents did not find the additional commitment to home visits onerous, but rather found it beneficial to have regular support.

The substantial improvement in their child's behaviour found in this pilot was similar to improvement noted in other outcome studies on efficacy of IYP (Fergusson et al., 2009; K. Jones et al., 2008; Sturrock et al., 2013; Webster-Stratton et al., 2011). For these multiple-risk families to match outcomes similar to those reported in other studies suggests the addition of HPS has benefits for more vulnerable families. However, there were still some participants with post-treatment scores in the clinical range. This was concerning, as having post-treatment scores in the clinical range is an indication that children are more likely to engage in delinquent acts in adolescence and is a predictor of poorer long-term outcomes (Webster-Stratton et al., 2011). Further refinement of the enhancement was developed in order to improve effectiveness for more families.

While results of this pilot showed improvement for HPS families, it could not be concluded that the additional support from HPS made the difference. The only definitive way to test this hypothesis was to carry out a prospective randomised controlled study to test the additional benefit of adding HPS to IYP. This was the focus of the present study.

Development of Home Parent Support Structured Guide

During the pilot period of HPS there was no formal therapist guide. Developing a guide was anticipated to improve outcomes found in the pilot study. The structured therapist guide was developed to support therapists in the delivery of the HPS intervention (see Appendix D). It

also served to maintain fidelity and allow for future replication of the intervention by other clinicians and other agencies. There are well established links between treatment fidelity and outcomes (Eames et al., 2009; Webster-Stratton, Reid, & Marsenich, 2014). Treatment fidelity is important in any programme replication but especially so within community-led interventions. The guide specified key components for each home visit to ensure the focus of treatment was on successful implementation of the IYP strategies and addressing barriers to achieving this (see Appendix D). The development of this guide was one way to support therapists to maintain the integrity of HPS and to maximise outcomes for parents.

There were a number of steps taken to develop the HPS therapist guide:

- i. Specification of core skills required for HPS therapists
- ii. Consultation with parents and therapists on helpful aspects of HPS
- iii. Development of a trial therapist guide
- iv. Feedback from a focus group of parents, HPS therapists and IYP group leaders
- v. Final revision of therapist guide.

Core Skills Required

HPS therapists were registered health practitioners under the Health Practitioner Competency Assurance Act (2003). Training and supervision are essential requirements for therapists working with parents of children with challenging behaviour in a community setting (Webster-Stratton et al., 2014).

Training

Training in mental health ensured HPS therapists were able to adequately assess and address the mental health needs of both children and parents. This was necessary due to the high comorbidity of childhood disorders such as anxiety, depression, and ADHD with child conduct behaviours (Ford, Goodman, & Meltzer, 2003). Therapists had to meet the core requirements of the DHB ICAMHS service and were offered additional training as required in areas such as assessment, childhood mental health disorders, attachment, Treaty of Waitangi, neurodevelopment, community safety, and risk assessment.

Adult mental health problems have a strong influence on child behaviour and have been associated with poorer outcomes, parental stress, and mothers reporting more severe child behaviour problems (Beauchaine et al., 2005; Reyno & McGrath, 2006). Studies have also shown that when parental wellbeing is addressed, depressed mothers show greater

improvement in measures of child conduct problems (Baydar et al., 2003). HPS therapists' key skills were to know how to assess mental health in children and their parents, to know how to prioritise urgency, and to know when to refer to other agencies. Identifying which issues to address, when, and how, is important, as parents often have limited capacity to address multiple issues.

Training in IYP was a requirement for HPS therapists and it was highly recommended that they were also accredited IYP group leaders or working towards accreditation. HPS therapists also delivered IYP programmes within the community to remain familiar with the programme content. This was to maintain the therapists' knowledge of the IYP programme and their approach to working with vulnerable families. Training in IYP is a three-day performance-based training delivered by certified trainers that includes "active experiential training methods, including self reflection, behavioral role plays, clinical principles, and collaborative group sharing" (Webster-Stratton et al., 2014, p. 790). The emphasis is on clinical methods and therapeutic processes, rather than a didactic lecture based training, and therapists model this approach for parents. Having a collaborative approach respects the expertise of parents, their knowledge of their child, and the challenges they are experiencing. Working collaboratively with parents who are vulnerable helps develop a positive therapeutic relationship, reduces resistance and promotes self-efficacy (Garland, Haine-Schlagel, Accurso, Baker-Ericzen, & Brookman-Frazee, 2012; Hutchings, Bywater, & Daley, 2007; Webster-Stratton & Herbert, 1994). Hence, it is important that the HPS therapist's approach is collaborative and congruent with that of IYP philosophy and that of IYP group leaders. Having trained therapists ensured the HPS intervention was delivered professionally and with credibility.

Supervision

The second core factor for therapists was supervision. Fortnightly supervision and monthly multi-disciplinary team (MDT) meetings were a requirement for all HPS therapists. The MDT consisted of a Child and Adolescent Psychiatrist, Developmental Paediatrician, MOE IY coordinator and the HPS therapists. All cases were reviewed at the MDT, treatment plans revised, and risk monitored. The role of supervision for therapists was to ensure they were well supported as they worked with families. The focus of supervision was on maintaining a collaborative approach, incorporating clinical skills such as modelling, praise, self-reflection, rehearsal, cognitive restructuring and goal setting into their practice, and integrating their knowledge of child development and behavioural theories with IYP strategies to meet the

needs of each family. Both training and supervision ensured that HPS therapists maintained a high level of skill, knowledge and competence.

Working collaboratively

A collaborative, strengths-based approach allowed parents to experience validation for their efforts and this in turn encouraged them to persevere with implementing new ways of interacting with their children. In fact, the therapist becomes a role model for parents to see and experience how they can respond to their children. Eames and others found that positive leader behaviours predicted change in parents' positive behaviours and that parental level of praise is a key mechanism of change (Eames et al., 2010).

Enhancing uptake of parent skills

Reinforcing the key principles from the group IYP sessions, and rehearsing skills in the home, helped parents translate the strategies learned in the group into their own parenting practice. HPS maintained the focus of the intervention on parents gaining mastery in new skills and building confidence. This was achieved by working with parents to set realistic and achievable goals and to evaluate these regularly. Identifying small steps showed parents how to achieve change, how to notice this change, and how to reinforce new behaviours with praise and affirmation. Having goal-focused sessions provided a structure to achieve what parents identified as important for them and their family. This was both validating and motivating for parents. Each session identified and recorded the parents' goal and focused on revising strategies to achieve this.

Awareness of systemic factors

Supporting families to make change involved addressing other factors that affect responsiveness to intervention. These included: child factors (comorbidity, learning difficulties, social skills); parent and family/whānau factors, (punitive parenting practices, social isolation, parental mental health, stress); and contextual factors (financial, employment, housing) (Kazdin, 2005). Having knowledge of supporting agencies within the community helped with referral and access to support agencies outside the scope of HPS. It was the interrelationship of these factors that HPS therapists had to navigate and respectfully work on with parents.

In summary, the success of a home visiting programme “rides on the shoulders” of its home visiting therapist (Gomby, 2005, p. 40). They need skills to establish rapport with families who are often hard to engage, deliver the intervention and respond to any family crisis that

may arise, using a number of problem solving and cognitive skills to lead change. “These are not minimal skills” (Gomby, 2005, p. 40).

Consultation

Feedback from parents

A review of parent feedback from the Parent Satisfaction Questionnaire collected for the pilot study (Lees & Fergusson, 2015) was carried out to identify strategies parents found helpful and those they did not find helpful. Parents identified a number of helpful strategies, including the therapist being supportive and validating, “accepting where things were at in the home”, and working collaboratively with parents in a non-blaming way. Parents appreciated that HPS was regular and personalised and many felt more confident about addressing stress, “now I feel I have more tools in my box when getting stressed and pushed”. They also appreciated that it was in the home so they did not have to travel and this meant both parents could be involved so “we can learn together and be on the same page”. Many participants wanted help to change their child but came to realise that both parents needed to change first, for example, “I wanted to get help to change my son but realised we needed to change first”. Practising new strategies at home with the children meant parents could ask more questions and tailor the techniques to meet their child’s specific needs and other personal circumstances. As a result, they felt they gained “more understanding of my child and what does and doesn’t work and what they need”. Many families had busy schedules to keep with multiple appointments, so the flexibility to change HPS appointments was appreciated as family circumstances often changed between sessions.

Constructive comments from parents included a need for more information on understanding children’s developmental stages and needs, especially children on the autistic spectrum and how to respond to them. Parents also wanted more help to address their mood and negative thoughts so they could be “more in control” and “not be so negative to my kids”. Additionally, parents wanted more follow-up after the end of the IYP groups and, as a result, one-month and three-month follow-up meetings were added.

Feedback from therapists

HPS therapists were asked what worked well in their experience of HPS. They found the work rewarding and “a privilege to be supporting whānau when they were feeling vulnerable”. They were encouraged to see how responsive parents were and their willingness to try things in the home when they had not felt confident to do so in the group. Some practical feedback from therapists included aligning the assessment with ICAMHS

assessment tools and risk assessment. They also wanted to see additional information in the assessment document on expectations from parents and specific goals (from attending IYP and from HPS), to identify strengths (family and referred child), and what the child's perspective was (if appropriate). Therapists also suggested a practical checklist form to identify the key components of each session as a prompt. The checklist also served as a reminder of what needed to be covered in subsequent sessions if they were not covered that week. This feedback informed the development of a single page therapist guide to be trialled (see check list in Appendix D).

Trial of draft HPS therapist guide

A draft guide was developed to incorporate as many elements as possible from the literature (see Chapter 2) and feedback from the pilot evaluation. This was trialled for six months and further refinements were made after receiving feedback from a small focus group of parents, and from the HPS therapists and IYP leaders.

Feedback from parent focus group on draft therapist guide

Six parents were asked to give feedback on specific aspects of HPS that were positive and those that could be improved. Most comments were positive with few additional suggestions for improvement. They liked having regular support and having HPS delivered in the home. Responses included the ability to access their therapist between sessions (mobile phone text messages) and the flexibility to change appointments if necessary as positive and helpful. Other helpful aspects related to support they received to increase their understanding of their child's temperament and learning stages, and having developmentally appropriate expectations. This helped them to see behaviour as "not always naughty" but developmental and how to change the way they respond.

Additionally, parents found the support to address their negative thoughts and to restructure these "to have some coping thoughts at the ready" was helpful. Others reflected that this shift in thinking had benefits in the workplace as one father found "being positive with my work mates has made a difference, I look for what they are doing well not the other way round." Families appreciated support to attend professional meetings, for example at school, "she came to school to talk to the teachers and they listened to her." Others were grateful for access to further assessment for their child, "I finally had my son assessed and diagnosed." These parents had previously felt blamed for their son's behaviour and "felt like a failure."

Parents showed appreciation for HPS intervention in spontaneous comments about how helpful the intervention was in terms of changed relationships within the whānau: "I wasn't

enjoying him much before – now I love spending time with him, he makes me proud! He’s my little buddy.” Some were grateful for the support they had received, “it changed my life. I am a stronger and better person.” Others expressed the hope that this sort of help would be available for everyone and not just those who had problem children. “I see so many parents struggling to relate to their children ... I just wish HPS was more widely available ... EVERY parent has challenges and would benefit not just ‘problem’ children.”

Feedback from HPS therapists

Therapists liked the flexibility of the guide so they could “pace at the parent’s level” and be guided by the parents. Some changes included the need to have more recognition that building a relationship with the parent takes time and is the foundation for trust and effective interaction. The guide needed to allow more time for, and emphasis on, building a relationship with the family/whānau in the first sessions. For Māori this process is whakawhānaungatanga, meaning getting to know each other by finding connections and can take several sessions.

Other changes to the guide included having a clear explanation of the role and expectation of HPS and how it was delivered (for example, that it does not replace the group IYP course). The assessment documents needed to consider the parents’ understanding of their child’s developmental stage, temperament, and emotional regulation. The guide also needed to reduce duplication of paper work required by the DHB and include Consent, Continuous Assessment, Risk Assessment and Relapse Prevention.

While parents wanted more follow-up this was achievable at one-month but was not realistic to maintain a three-month follow-up because of workplace constraints. The one-month follow-up was maintained and at that time, if no further treatment was required, families would be transitioned to the community and given information on how to access further specialist help if required. This aimed to empower parents and reduce dependency.

Feedback from IYP group leaders

IYP group leaders appreciated the regular contact with HPS therapists to keep them informed of progress and the challenges for families in their group who were receiving HPS. Group leaders reported that the shift in parents receiving HPS was “motivating and contagious” in the group. These parents were excited to share their success and brought new energy to the group. Many group leaders in the community felt they “did not have the skill to manage some of the more complex issues families faced” and were “relieved” these families were able to access specialist services within HPS.

Some group leaders had concerns about new strategies being introduced to parents when the content had not yet been covered in the IYP group. This was sometimes done in the HPS sessions when strategies were introduced to support the family to make changes. For example, some parents were not able to use praise effectively because they were so tuned into their child's negative behaviours and, as a consequence, were unwittingly reinforcing negative behaviours by giving them attention. For these families the HPS therapist felt it was appropriate to talk about ignoring some minor behaviours where possible, so they could pay attention to the "positive opposite behaviours", and reinforce these with positive attention. The difficulty occurred when the success with ignoring was shared in the group and this topic had not yet been covered in the IYP group². It is important to cover the topics in the order they are presented in the IYP programme so that the initial strategies that build a positive parent-child relationship are well established before the strategies that reduce inappropriate behaviour are introduced. However, the purpose of HPS was to tailor the intervention to the needs of the family so they experienced some success and remained engaged. At times this meant giving them other strategies. Given this rationale, it was agreed there would be close communication with IYP group leaders when topics were introduced ahead of the group having covered them.

Refinement of HPS Therapist Guide

The HPS therapist guide was refined to include a section on background information about the establishment of the service and the service aims, pathways, entry criteria, expectation of service, and therapist approach. This was to ensure subsequent therapists were aware of the background and philosophy of HPS. Other changes were made to the assessment form, consent form and the session guide. The final guide for each session was a single sheet with tick boxes designed to be flexible and act as a prompt for the specific components recommended in each session (see Appendix D).

In summary, IYSS was established as a collaborative service between MOH and MOE to increase access for families to IYP programmes and to provide additional HPS for the neediest families. It was hypothesised that the addition of HPS would improve outcomes and this was the focus of the current study.

² The principle of ignoring is a strategy that is covered later in the IYP programme so when this parent shared in the group that ignoring had been very successful, other parents wanted to know about this strategy.

Conclusion

Once the enhancement intervention was developed and evaluated via a pilot study, it was necessary to test the additional benefits of HPS over and above IYP alone in a randomised controlled trial. The next chapter outlines the design of this study.

Chapter 4: Methods

A randomised controlled trial is regarded as the gold standard design for evaluating treatment outcomes (Akobeng, 2005). The details of the design used to test the benefit of adding HPS alongside an evidence-based parenting programme are outlined in this chapter.

Design

This study was a pilot single blind, parallel, superiority, randomised controlled trial. Eligible participants were randomly allocated to receive HPS or to the control group of IYP treatment alone. Randomisation was undertaken using a computer-generated sequence in a 1:1 ratio to the two treatments arranged in permuted blocks. Stratification was by age, sex, and ethnicity. Data from all participants were included in the data analysis, irrespective of whether follow-up data were available, using an intention-to-treat design.

Ethical Approval

Approval was received from the New Zealand Northern B Health and Disability Ethics Committee (NTY/12/06/050).

Registration of Trial and Publication of Protocol

This trial was registered with the Australian New Zealand Clinical Trials Registry (ACTRN12612000878875). The protocol for this trial was published in *Trials Journal* (Lees, Fergusson, Frampton, & Merry, 2014).

Setting

This study was carried out in a real world setting within the Bay of Plenty District Health Board, Tauranga, New Zealand.

Participants

Participants were parents/caregivers of children with conduct problems recruited from IYP groups delivered in the community by ICAMHS, MOE and NGOs in Tauranga. Parents attending IYP were either self-referred or referred by health or education services. Criteria for parents to attend IYP were: that they spoke English, had the child in their custody or had regular access arrangements, and their child did not have an intellectual disability. All

families attending IYP were screened for eligibility for IYSS and those who met the criteria were invited to take part in the trial until 126 participants had been recruited. Participants were randomly allocated to HPS, or to IYP alone. Where there was more than one child in a family who met the criteria for IYSS, the parent identified the child they found most challenging as the focus child. Where more than one parent/carer was attending IYP, and their child met the criteria for IYSS, one parent/carer was identified as the trial participant.

Inclusion criteria

Participants were eligible for inclusion in the trial if:

- They were parents/caregivers of children with conduct problems, who were enrolled to attend IYP
- Their child was over 3 years and under 8 years of age on the date of signed consent to participate in the trial
- Parents' child behaviour scores were in the clinical range for any of the psychometrics below:
 - ECBI Total Problem Scale > 11
 - ECBI Intensity Scale > 127
 - SCS < 17
- Or there was one of the follow risk factors:
 - Child, Youth and Family (CYF) involvement
 - School exclusion
 - Parent diagnosed with mental health disorder

Exclusion criteria

None.

Withdrawal criteria

Participants could withdraw from the intervention at any time but remained in the trial. If participants required ongoing support, they were assisted to engage in an appropriate community agency.

Intervention

Incredible Years[®] basic parent programme

All participants received the 14–16 week Incredible Years[®] basic parent programme, received the usual support from IYP group leaders and had access to all community services that

would normally be available to them. Each IYP group had a mixture of control and treatment participants. This was to prevent real or perceived difference between the IYP groups.

Home Parent Support

Participants allocated to the intervention group received 10 in-home sessions from a separate therapist accredited in IYP while they attended the 14–16 week basic IYP group programme. The intervention included a comprehensive child assessment, including developmental, medical, and social history, pre-school or school reports, involvement of other agencies, family structure, and parental mental health problems (see Chapter 3). Participants were supported to identify specific weekly goals they wished to achieve and to record them. The therapist visited them in their homes to provide support to personalise and implement the IYP strategies and to address any barriers to implementation of these strategies that they or the therapist identified. The therapist followed a structured intervention guide to ensure therapist fidelity. Treatment included follow-up contact at one-month post-intervention to assess stability of change and provide further assistance if required.

The therapists delivering HPS met weekly to review all participants' progress and to identify any additional support required for these families. Therapists had fortnightly contact with IYP group leaders to review attendance and participant progress. Participants were reviewed monthly in a multi-disciplinary team that included a Child and Adolescent Psychiatrist, Paediatrician, MOE IYP coordinator, and the HPS therapists. Specialist psychiatric and/or paediatric assessment was available if required. This multi-disciplinary team also reviewed any adverse events and assessed the likelihood that this may be related to the intervention. There were no adverse events reported.

Outcomes

Primary outcome

The primary outcome was change in child behaviour from baseline to post-intervention according to the parent-reported Eyberg Child Behavior Inventory (ECBI) Problem Scale.

Secondary outcomes

- The percentage of parent scores on the ECBI that were in the normal range at post-treatment.
- The percentage of parent scores on the Child Social Competency Scale (SCS) that were in the normal range at post-treatment.

- Changes from pre- to post-intervention in child behaviour, parenting practices, parent relationships and parental wellbeing measured on the Family Questionnaire (FQ) scales.
- The percentage with at least 70% engagement in IYP measured on the attendance register.
- Levels of parent satisfaction with IYP measured using the Parent Satisfaction Questionnaire.
- Maintenance of improvement at six-month follow-up measured on the FQ, the SCS and both scales of the ECBI.
- Parent reports of competence with implementing IYP strategies in the home as reported in the Follow-up Questionnaire at six months.

Measurements

Screening measurement

The IYP group leaders carried out screening using the Eyberg Child Behavior Inventory and the Social Competence Scale–Parent Version. These measures have been used in similar studies (Hutchings, Bywater, Daley, et al., 2007; McDaniel, Braiden, Onyekwelu, Murphy, & Hassan, 2011).

- The ECBI is a parent-rated inventory with two scales. The Total Problem Scale is a measure of the type and frequency of 36 behaviours. Total problem scores over 11 are in the clinical range. The Intensity Scale is the degree to which parents find the behaviours problematic, rated 1–7. Intensity scores over 127 are in the clinical range (Eyberg & Pinus, 1999). This is a self-report measure of child behaviour and while it lacks the objectivity of an independent measure, it is regarded to have adequate correlation between results from parent reports and independent observation (Patterson et al., 2002; Scott, Spender, et al., 2001)
- The Social Competence Scale – Parent Version (SCS) was developed by the Conduct Problem Prevention Research Group (Corrigan, 2002; Fast Track Project, 2010–2011). It consists of 12 items completed by the parent on their child’s pro-social behaviours, communication skills, and self-control on a 5-point Likert scale. A total score less than 17 is indicative of poor social skills and is considered a clinically important cut-off point for meeting IYSS criteria.

Pre-treatment assessment

Once eligibility was confirmed a research assistant collected pre-intervention baseline data:

- Demographics
- Family Questionnaire (FQ). This was developed by the Incredible Years[®] Pilot Study Working Group for use in a joint-agency national evaluation of the Incredible Years[®] Pilot Study (Sturrock et al., 2013). The questionnaire incorporated items from a number of previously validated measures to provide a comprehensive assessment of child behaviour, parenting practices, partner relationships, parental depression, life events, cultural participation, and parent satisfaction. There are six factors in the child behaviour measures: Conduct disorder, ODD, ADHD, Self-control, Anxiety, and Social competence (Gray, 2013). The research assistant read all questions out to the participant and scored responses on the questionnaire.

Post-treatment assessment

The IYP group leaders collected post-treatment measurements using the ECBI, SCS and the standard Incredible Years[®] Parent Satisfaction Questionnaire (PSQ). The PSQ is a 24-question assessment of parent views on the programme content and teaching methods. Parents rated their satisfaction on a 1–7 Likert scale (Webster-Stratton, 1999). The research assistant repeated the FQ within two weeks of the final session of IYP.

Follow-up assessment

At six-month follow-up the research assistant collected ECBI, SCS and FQ and a quantitative/qualitative follow-up questionnaire. This questionnaire included Likert type scales and opportunities for written feedback to assess levels of engagement, helpful aspects of the trial, level of competency with implementing IYP strategies, and changes in relationships and behaviour noticed by parent/carers (see Appendix E). The schedule of data collection at each time point is summarised in Table 5.

Table 5. Schedule of data collected

Method of data collection	Screening	Pre-treatment	Post-treatment	Follow-up
ECBI and SCS *	X		X	X
Demographics		X		
FQ		X	X	X
PSQ			X	
Follow-up questionnaire				X

Note. *Screening is within 3 weeks of baseline data collection.

Sample Size

Previous research indicated that 80% of participants completed the IYP group (Hutchings, 2012; Sturrock et al., 2013). Therefore, a total sample of 126 participants was collected in order to achieve 50 participants in each treatment arm at post-treatment. This trial represents the first formal assessment of the HPS intervention. It was undertaken as a pilot study to assess the feasibility of a full RCT in the wider clinical setting and to collect data to inform the power calculations for such a study. For this reason, there were no formal power calculations for the proposed sample size of 126, but this sample size represents a substantial and adequate number of participants who were representative of those likely to benefit from the intervention. Standard power calculations with 50 in each arm has 80% power to detect an effect size of 0.57 between the control and experimental group (i.e., Cohen's $d = .57$).

Randomisation and Sequence Generation

On completion of baseline data collection, participants were allocated an identification number and randomised to HPS or to IYP alone. An independent statistician, using a computer-generated randomisation sequence produced prior to the enrolment of any participants, undertook the randomisation. Randomisation was stratified on each IYP group so that each intake or source group had approximately equal numbers allocated to each treatment. The randomisation sequence was allocated in a 1:1 ratio to the two treatments arranged in permuted blocks and was stratified on age (under 5 years and over 5 years), sex, and ethnicity (Māori and non-Māori). After a participant had met all inclusion criteria and signed informed consent, they were to be given the next available randomisation allocation (Figure 5).

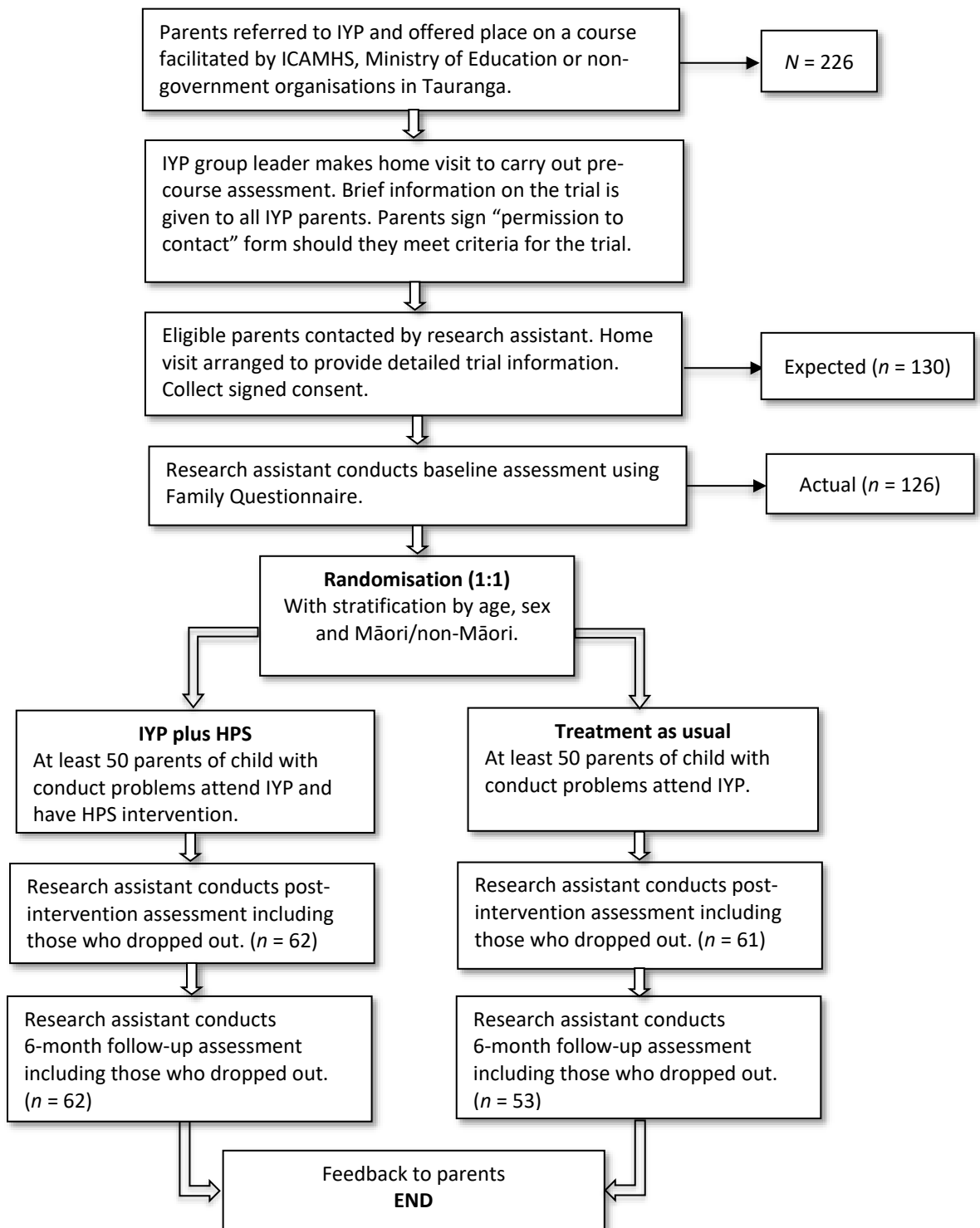


Figure 5. Participant flow

Integrity

There were a number of procedures implemented to ensure the integrity of the study design and the delivery of IYP and HPS.

Randomisation

An independent statistician, using computer-generated tables, carried out randomisation. Participants' identification was removed and replaced with a code.

Allocation concealment

The randomisation list was not available to any researchers directly involved in the assessment or screening of participants. The participant was allocated once all inclusion criteria were met. Following randomisation, participant allocation was returned to me and I informed participants of their allocation and arranged for HPS to begin for those in the treatment group.

Blinding

Due to the nature of the study, it was not possible to have a completely blinded design. Participants knew which intervention they were receiving. IYP group leaders also knew who was in the treatment arm as their contribution was a part of the HPS intervention. The principal investigator led the IYSS team and conducted the multi-disciplinary team review and was therefore aware of those participants in the treatment arm. However, the research assistants undertaking the assessments were blind and remained blind to treatment allocation throughout the study. Participants were asked not to reveal to the research assistants the intervention they were getting. All participants were given an identification number to ensure that I, as researcher, and all those involved in summarising and inputting the data were unaware of the treatment allocation.

Research assistants

Two independent research assistants collected data at each time point and were blind to participant allocation to ensure the integrity of data collection. I met with them to explain the research and train them in the process of visiting participants in their homes to obtain consent (see Appendix F), collect data, record and check completed data, and how to manage any concerns they might have about any participant. They were also instructed to get additional contact information from people close to them in case the participant changed contact details (see Appendix G), and to offer them the option of additional Māori cultural support (see Appendix H). A summary of the research assistants' information is in Appendix I.

The research assistants made contact with all those who had agreed to be contacted, explained the research, obtained informed consent and completed the pre-treatment questionnaires. The same research assistant collected assessments at post-treatment and at six-month follow-up. I was in regular contact with each research assistant and often received text messages as they made contact with each family and if there were any concerns (e.g., no one home, no longer have the child in their care).

Incredible Years® group leaders

All Incredible Years® group leaders were independent of the research and collected initial screening data as part of their normal process for delivery of an IYP group in their agency. I met with all group leaders who were delivering IYP groups to provide information on the research project and provided guidelines on the process for recruiting participants. A written guide was prepared for each leader to ensure they followed a standard process. This guide gave clear instructions to collect the pre-treatment psychometric data before giving information on the research to ensure participants' scores were not being influenced by their desire to be part of the research (see Appendix J). Group leaders were asked to ensure parents requesting further information signed the "Consent to be Contacted" form and were given the "Research Information" sheet to read and share with their family/whānau (see Appendix K). I made contact with group leaders two weeks prior to the beginning of each IYP group, and during the interventions, and I was available any time they needed contact.

IYP group leader fidelity

Trained IYP group leaders facilitated all IYP groups and they received two hours supervision fortnightly. All IYP group leaders were either accredited group leaders or working towards accreditation. They all completed weekly checklist protocols, and attended supervision every two weeks with an IYP-accredited peer coach or mentor to review tapes of their IYP group facilitation.

Home Parent Support

Data collection was over a two-year period and this involved five therapists. Participants allocated to receive HPS were allocated to one of these five HPS therapists who were independent of the IYP group leader. Each therapist had 6 to 10 families at a time and a range of 5 to 26 families over the two years of data collection. Each therapist followed the structured guide in their intervention and kept a record of activities in each session to ensure that key activities were included. Supervision was provided every two weeks to review intervention strategies and address any concerns. Each family was reviewed monthly at the ICAMHS multi-disciplinary team meeting for additional monitoring and revision of risk.

Home Parent Support therapist guide

The therapist guide specified the important components of the HPS intervention. It identified key elements for each session to ensure the intervention was focused on the content and learning from IYP and that the learning occurred in a supportive collaborative manner to encourage and motivate participants. The key elements of HPS included reviewing IYP principles, tailoring strategies, practising and rehearsing new skills, therapist modelling praise, affirming and validating parents, identifying and reviewing participant goals, and addressing barriers to implementation of new skills (see Chapter 3).

Adherence to the therapist guide was reviewed against a fidelity checklist on 20% of randomly selected therapists' files (using block randomisation by therapist).

Statistical Methods

Standard descriptive statistics were used to report demographics, baseline status for outcome measures, and presentation features for the sample as a whole and by randomly allocated group. These included means, and standard deviations for metric measures and frequencies and percentages for categorical measures.

Quantitative analyses

The primary outcome measure was the change in the parent scores on the ECBI total problem score from pre- to post-intervention. This was calculated for each individual and compared between randomised groups using ANOVA with randomised group and strata as fixed factors. Additional sensitivity analyses were not required as the groups were perfectly balanced at baseline.

The metric secondary outcome measures that assessed change from pre- to post-intervention in SCS, and child behaviour, parenting practices, parent relationships and parental wellbeing, as measured by the FQ, were also compared between randomised groups using ANCOVA models with baseline levels as covariates and randomised group and strata as fixed factors.

The categorical outcomes at post-treatment, including the percentage of parent scores on the ECBI and the SCS that were in the normal range at post-treatment and the percentage of participants with at least 70% engagement in IYP, were compared between randomised groups using chi-square tests.

Further ANCOVA and logistic regression models were used to identify if ethnicity or parental mental health moderated child behaviour outcomes.

The maintenance of post-treatment results for the primary and secondary outcomes at six months' post-intervention was compared between randomised groups using ANOVA. This analysis explored change in the metric measures from immediately post-treatment to six months between the two randomised groups.

Additional exploratory analyses included a per-protocol analysis for those participants who attended 70% of IYP and 70% of HPS if they were in the treatment arm. This analysis explored change in the metric measures from immediately pre- to post-treatment and post-treatment to six months between the two randomised groups.

An analysis of data to determine the number needed to treat was carried out as a measure of effectiveness of the HPS.

A two-tailed $\alpha = 0.05$ was used for all statistical testing of the results of the above analyses and results were summarised using 95% confidence intervals of the differences between randomised groups. Should any of the above metric outcome measures not meet requisite assumptions for parametric analyses after transformation, non-parametric tests including the Mann-Whitney U test were used for analyses.

All participants' data were included in the intention-to-treat analysis. Considerable efforts were made to obtain post-treatment and follow-up data from all randomised participants even if they did not complete the treatments. Missing data were in the first instance managed with a last observation carried forward approach with additional sensitivity analyses undertaken using multiple imputation methods. The extent of compliance, including information on those who did not complete either HPS or IYP, were captured and summarised. A per-protocol analysis, including only those who completed the treatments without protocol violations and had all relevant assessments at each time, was also undertaken to identify whether compliance factors affected outcomes.

Qualitative analysis

A small number of qualitative questions were included in the questionnaires to assess participants' unique perspective and experience of the intervention. At baseline, open questions included reasons for referral to IYP, and parents were asked about their expectation of the intervention. Post-treatment questions asked about parents' experience of the intervention they received (HPS or IYP) and what, if any, benefits they had gained. Follow-up questions focused on changes in child behaviour, and parent-child relationships. Questions also asked about parents' experience of being part of the trial and any suggested improvements.

Responses were coded using a general inductive approach described by Thomas (2006) and using NVivo software. All responses were transcribed and read systematically to identify meaningful units. These were coded into categorical nodes to identify emerging themes and any relationships between the themes by each randomised group. The frequent, dominant or significant themes were identified, and informed research findings. Participants' responses to open-ended questions gave additional insight into the impact of child behaviour on the family, their expectations and hope for change, and their experience of the intervention. An independent coder coded 30% of transcripts to ensure reliability of coding. Any discrepancies in themes were resolved by agreement between the two coders.

Participant Feedback

At the conclusion of the study, participants received a summary of the main findings including examples of qualitative comments collected (Appendix L).

Conclusion

The methodology for this study was robust. It included a randomised controlled trial, the trial was registered, the protocol was peer reviewed and results included both quantitative and qualitative analysis.

The next two chapters are the quantitative and qualitative results of this trial. The quantitative results are presented first and includes the analysis of behaviour change over time.

Chapter 5: Quantitative Results

Analysis Overview

The aim of this research was to assess the benefit of adding HPS to IYP for vulnerable families. Participants who met the inclusion criteria ($N = 126$) were randomly allocated to receive HPS plus IYP or to IYP alone. The primary outcome was the change in parent scores on ECBI total problem score from pre- to post-treatment, which was calculated for each individual and compared between randomised groups using repeated measures of ANOVA. Secondary outcomes were also calculated using ANOVA to explore differences between groups on the ECBI intensity score, SCS, and FQ at post-treatment and ECBI total problem, ECBI intensity score, SCS, and FQ at six-month follow-up. Additional exploration compared change in the percentage of children with behaviour scores in the clinical range, and a per-protocol analysis was carried out at post-treatment and follow-up using chi-square tests. Further analysis to determine if either ethnicity or mental health problems moderated outcomes was carried out using ANOVA.

Complete data were collected on $n = 123$ (97.6%) of participants at post-treatment and $n = 115$ (91.3%) at follow-up (see Figure 6). Intention-to-treat analysis was applied to test pre- to post-treatment, post-treatment to follow-up, and pre-treatment to follow-up outcomes. Imputation using last observation carried forward was used for $n = 3$ at post-treatment and $n = 11$ for pre-treatment to follow-up. A two-tailed $\alpha = 0.05$ was used for all statistical testing and results are summarised using 95% confidence intervals. Cohen's d was calculated to show the size of the treatment effect between groups based on Cohen's standard interpretation of effect size of $d = .20$ small, $d = .50$ medium, and $d = .80$ large (J. Cohen, 1992).

Integrity of HPS intervention

In order to assess adherence to the treatment, 20% of randomly selected HPS therapist files were reviewed against a fidelity checklist. There were 12 files (20%) reviewed, with a minimum of two files from each therapist. Adherence to the critical elements of the protocol is summarised in Table 6.

The mean number of sessions received was 10 (range 5–11). The two families who received fewer than eight sessions chose to limit sessions because i) they stated they thought were managing and no longer required HPS, or ii) they missed some sessions due to work

commitments. All therapists set and reviewed goals in each session and tailored the content to the needs of the family/whānau. This included practising specific skills which parents were struggling with (e.g., playing with children, emotion coaching, praise statements), reviewing vignettes to review key principles to support learning, adapting strategies to meet developmental needs of child (e.g., reward charts and routines), using puppets to practise new skills, and addressing additional supports for parents. All therapists validated and encouraged parents in their progress and their commitment to be effective parents. Comments from parents included, “I felt valued and encouraged by.... (therapist)”, “it was so helpful to be encouraged when I felt like it was not working”. Examples of barriers addressed were time, work pressure, parents not on the same page, having appropriate expectations for the child and themselves, child’s learning needs and difficulties with liaison with the school. Addressing stress, negative cognition, or parental mental health included challenging negative self-thoughts, developing positive coping statements, self-care strategies, managing own feelings, strategies for self-control (less yelling), building self-esteem and confidence in parents, encouragement to seek support for low mood, anxiety and financial stress. All families received one-month follow-up contact.

Table 6. Therapist guide fidelity check

Fidelity criteria	Therapist adherence (<i>n</i> = 12)
At least eight sessions of HPS delivered	10
Goal setting and revision	12
Evidence of tailoring to family/whānau needs e.g., practising skills, reviewing vignettes, adapting strategies	12
Examples of validation and encouragement	12
Examples of addressing barriers for implementation e.g., time, child’s learning needs, different parental values	12
Addressing stress, negative cognition, or parental mental health e.g., replacing negative cognition with coping statements	12
One-month follow-up contact	12

In summary, 10 of the 12 files (83%) met the fidelity criteria on all variables. The two files that did not meet the criteria on all variables reflected respect of participants’ wishes and not a violation of protocol.

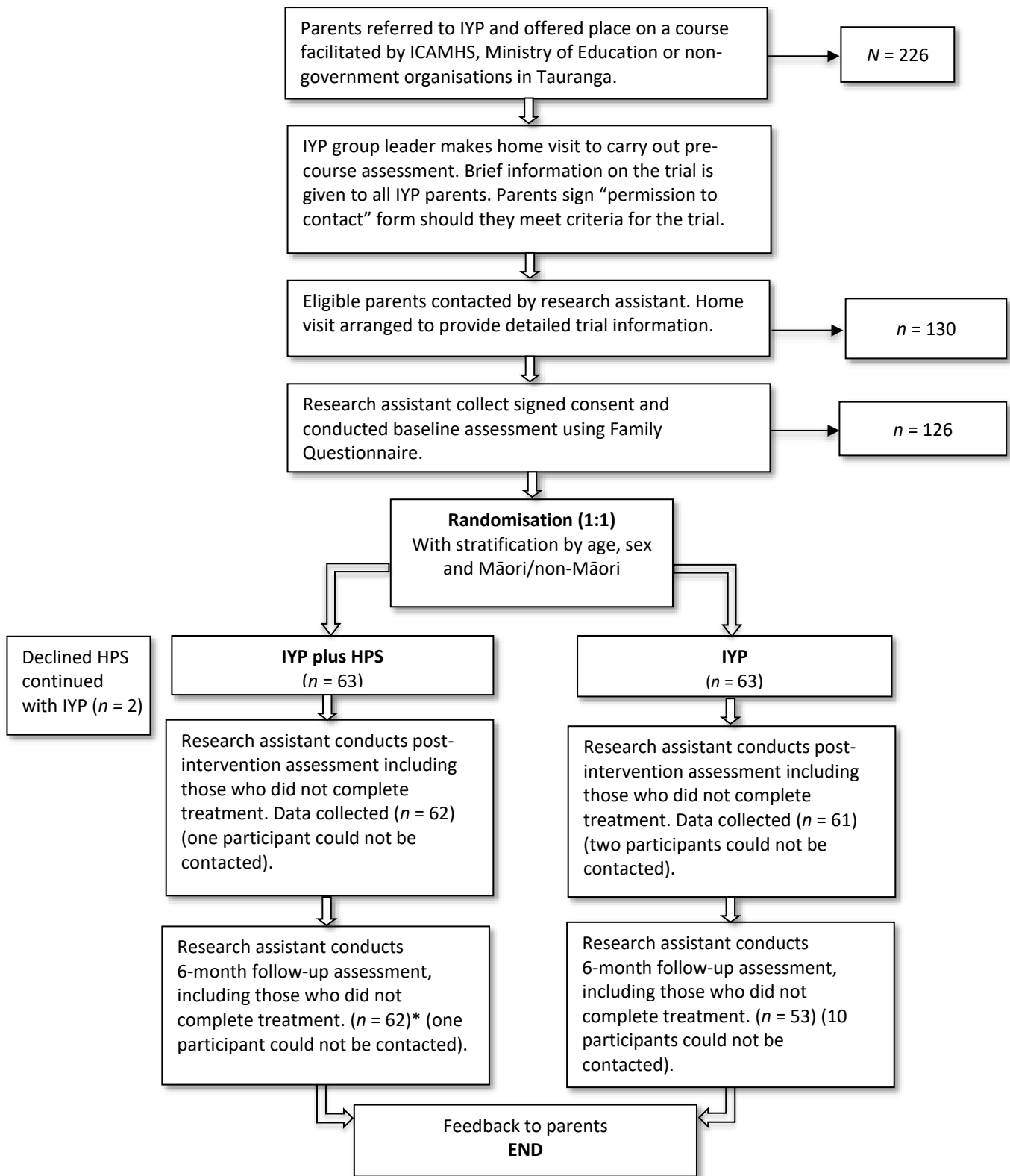


Figure 6. Participant flow

Note. *One participant lost at post-treatment was contacted at follow-up. Another participant could not to be contacted at follow-up.

Demographics

Demographic characteristics are set out in Table 7 and Table 8. They include sex, relationship to child, risk factors (solo parent, employment, education), major life events (moved house, became unemployed, death of family member, serious financial problems, divorce), and mental health problems (depression, alcohol and drug, other mental health problems). The majority of participants were women, male children were over-represented in the sample, and Māori represented about one third of total sample. Demographic characteristics showed the majority of referrals came from the secondary care sector, and that most participants had risk factors: many were solo parents, most were receiving a benefit, nearly half had experienced mental health problems, and two thirds had experienced more than one major life event in the last 12 months.

Parent characteristics are set out in Table 7. The number and percentage of participants for each demographic characteristic were similar between the groups showing randomisation had worked well. Child demographic characteristics (age, sex, ethnicity), and school exclusions are set out Table 8. Demographic characteristics were balanced between the two groups (see Table 8).

Table 7. Parent demographic characteristics at baseline

Parent demographic characteristic	HPS (<i>n</i> = 63)	IYP (<i>n</i> = 63)	Total (<i>n</i> = 126)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Female	58 (92.1)	54 (85.7)	112 (88.9)
Solo/separated	22 (17.5)	28 (22.2)	50 (39.7)
Natural parent	57 (90.5)	57 (90.5)	114 (90.5)
Referral from primary sector	19 (30.1)	19 (30.2)	38 (30.1)
Referral from secondary sector	33 (52.3)	34 (53.9)	67 (53.2)
Mental health problems ^a 1+	27 (42.9)	33 (52.4)	60 (47.6)
Major life event ^b 6+	10 (15.9)	10 (15.9)	20 (15.9)
Tertiary qualification	22 (34.9)	22 (34.9)	44 (34.9)
Receive a benefit	38 (60.3)	38 (60.3)	76 (60.3)
	Mean (<i>SD</i>)	Mean (<i>SD</i>)	Mean (<i>SD</i>)
Mean age parent/carer years	34.7 (8.3)	34.8 (8.5)	34.7 (8.4)

Note. ^a Depression or alcohol and drug or other mental health. 1+ more than one mental health problem. 6+ more than six major life events. ^b Moved house, became unemployed, death of family member, serious financial problems, divorce.

Table 8. Child demographic characteristics at baseline

Child demographic characteristic	HPS (<i>n</i> = 63)	IYP (<i>n</i> = 63)	<i>N</i> = 126
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Under 5 years	26 (41.3)	26 (41.3)	52 (41.3)
Male	43 (66.3)	43 (66.3)	86 (66.3)
Māori	20 (31.7)	19 (30.2)	39 (31)
Excluded from school	1 (1.6)	1 (1.6)	2 (3.2)
	Mean (<i>SD</i>)	Years (<i>SD</i>)	Years (<i>SD</i>)
Mean age years	5.4 (1.5)	5.5 (1.4)	5.4 (1.4)

Baseline measures

Baseline scores were examined to verify that the randomisation process had resulted in an even distribution between the groups. Both groups were similar at baseline (see Table 9).

Table 9. Baseline scores for each group

Measure	HPS (<i>n</i> = 63)		IYP (<i>n</i> = 63)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ECBI-P ^a	19.57	6.6	19.41	7.0
ECBI-I ^b	147.56	30.0	144.00	30.7
SCS ^c	16.94	7.3	17.54	7.2

Note. HPS = Home Parent Support, IYP = Incredible Years[®] parent programme. ^a Eyberg Child Behavior Inventory Problem Scale. ^b Eyberg Child Behavior Inventory Intensity Scale. ^c SCS = Social Competency Scale.

All but five participants had pre-treatment child behaviour scores in the clinical range on at least one of the inclusion measures. These five participants met the inclusion criteria as they were all referred by CYF. Two parents were in the treatment group and three in the control. Two of those in the control group did not complete IYP (one returned to custodial care, and the other became pregnant and moved out of town) and further data could not be collected. Their baseline scores were used to impute post and follow-up data. Data were collected for the remaining three participants.

Baseline measures for engagement

Completion of IYP was defined as having attended at least 70% of sessions. Baseline scores for those who completed 70% of the IYP programme were compared with those who did not. Independent t-test showed no statistical difference in severity of baseline scores for those who completed 70% of session compared with those who did not ($p > .05$) ECBI-P $t = 0.74$, $p = 0.46$, ECBI-I $t = 0.12$, $p = .91$ and SCS $t = 0.38$, $p = .70$ (see Table 10).

Table 10. Baseline scores by group for engagement

Measure	Engagement in IYP programmes by treatment groups (≥ 70% of sessions)				Engagement in IYP programme total sample (≥ 70% of sessions)		<i>t</i>	<i>df</i>	<i>p</i>
	HPS		IYP		Total				
	Completed IYP (<i>n</i> = 56)	Did not complete IYP (<i>n</i> = 7)	Completed IYP (<i>n</i> = 49)	Did not complete IYP (<i>n</i> = 14)	Completed IYP (<i>n</i> = 105)	Did not complete IYP (<i>n</i> = 21)			
<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)				
ECBI-P ^a	19.61 (6.75)	18.00 (5.48)	19.04 (6.80)	22.00 (8.00)	9.39 (6.77)	20.67 (7.37)	.74	124	.46
ECBI-I ^b	147.00 (28.00)	142.00 (46.75)	143.53 (28.19)	146.00 (36.23)	145.70 (28.03)	144.67 (38.89)	.12	124	.91
SCS ^c	17.47 (7.52)	15.43 (5.06)	16.95 (7.57)	17.50 (4.67)	17.30 (7.52)	16.81 (4.78)	.38	124	.70

Note. HPS = Home Parent Support, IYP = Incredible Years[®] parent programme. ^a Eyberg Child Behavior Inventory Problem Scale. ^b Eyberg Child Behavior Inventory Intensity Scale. ^c SCS = Social Competency Scale.

Primary Outcome

Table 11 summarises the findings of the main hypothesis that HPS would improve outcomes for families most at risk for poor treatment response recruited for this study. The primary outcome variable was change in ECBI-P at post-treatment, which was tested using analysis of variance with 95% confidence intervals. The results show that the difference in improvement in ECBI-P at post-treatment was not significant and the primary hypothesis was not supported. While there was evidence for a main effect of treatment $F(1,124) = 142.88$, $p < .001$, showing all participants had significant improvement at post-treatment, irrespective of treatment group, there was no additional benefit of HPS at post-treatment ($F(1,124) = 0.2$, $p = .624$), (see Table 11).

Table 11. Primary outcome pre-post change on ECBI-P

Measure	Group	Pre- to post-treatment						
		Pre-mean (<i>n</i> = 63) (<i>SD</i>)	Post mean (<i>n</i> = 63) (<i>SD</i>)	Mean change	Difference in mean change	<i>F</i> (1,124)	<i>p</i>	<i>d</i>
ECBI-P		19.57	9.52	10.05				
HPS		(6.82)	(7.90)		.80	0.2	.624	0.13
ECBI-P		19.41	10.16	9.25				
IYP		(6.82)	(7.90)					

Note. SCS has inverse scoring where high scores are better. Cohen's *d* effect size .20 small, .50 medium, .80 large.
^a Eyberg Child Behavior Inventory Problem Scale.

Secondary Outcomes

A number of secondary outcome measures were analysed to further investigate the effect of HPS over time:

- Change in child behaviour scores on EBCI-I and SCS at post-treatment
- Maintenance of change in child behaviour at six-month follow-up on all measures
- The percentage of child behaviour scores in the clinical range over time
- Retention and engagement
- Child behaviour scores in a per-protocol analysis
- Family Questionnaire child behaviour measures
- Family Questionnaire parent relationship quality
- Effect of ethnicity on treatment response
- Effect of parental mental health problems on treatment response
- Change in parenting practice
- Parent satisfaction with Incredible Years[®] programme
- Parental confidence at six-month follow-up

Change in child behaviour at post-treatment on ECBI-I and SCS

Table 12 summarises the change in child behaviour scores on ECBI (Problem and Intensity Scale) and SC at post and follow-treatment. ANOVA showed no significant benefit of adding HPS at post-treatment on ECBI-I; $F(1,124) = 3.0, p = .624$, and no significant benefit on SCS; $F(1,124) = 1.2, p = .266$ (see Table 12).

Maintenance of change in child behaviour at six-month follow-up

The maintenance of change at six-month follow-up is set out in Table 12. An analysis of variance using repeat measures ANOVA across all three time points showed a time by treatment interaction on ECBI-P at follow-up, $F(2,248) = 3.5, p = .032$. There was no significant benefit on ECBI-I, $F(2,248) = 2.3, p = .102$ and no significant benefit on SCS, $F(2,248) = 2.6, p = .075$ (Figures 8–10).

As there was no differential effect on the primary measure for pre-post, but there was a significant effect found at post-follow-up, I explored whether this difference was significant when compared with baseline. This analysis showed those in HPS had significantly better scores at follow-up on two measures of child behaviour; ECBI-P, $F(1,124) = 6.3, p = .014$ and SCS, $F(1,124) = 4.6, p = .033$. Social competence showed small insignificant benefit pre-post and further gains post-follow-up. When these differences were compared with baseline there

was a significant difference. The difference in effect of treatment between the groups measured by Cohen's d was in the medium range at follow-up (see Table 12).

Table 12. Comparison of treatment effect over time

Measure	Group	Pre- to post-treatment						Post-treatment to follow-up						Pre-treatment to follow-up				
		Pre-mean (<i>n</i> = 63) (<i>SD</i>)	Post mean (<i>n</i> = 63) (<i>SD</i>)	Mean change	Difference in mean change	<i>F</i> (1,124)	<i>p</i>	<i>d</i>	Follow- up mean (<i>n</i> = 63) (<i>SD</i>)	Mean change	Difference in mean change	<i>F</i> (1,124)	<i>p</i>	<i>d</i>	Mean change	Difference in mean change	<i>F</i> (1,124)	<i>p</i>
ECBI-P		19.57	9.52	10.05				6.65	2.87					12.92				
HPS		(6.82)	(7.90)		.80	0.2	.624	0.13		2.841	5.2	.025	0.57		3.64	6.3	.014	0.63
ECBI-P		19.41	10.16	9.25				10.13	0.03					9.28				
IYP		(6.82)	(7.90)					(7.25)										
ECBI-I		147.56	112.24	35.32				106.43	5.81					41.13				
HPS Pre		(30.37)	(34.47)		9.15	3.0	.086	0.44		1.286	.07	.785	.069		10.4	3.2	.077	0.45
ECBI-I		144.00	117.83	26.17				113.30	4.53					30.70				
IYP Pre		(30.37)	(34.47)					(32.32)										
SCS		16.94	22.83	5.89				25.41	2.58					8.47				
HPS Pre		(7.29)	(8.78)		1.52	1.2	.266	0.28		1.414	1.6	.207	0.32		2.93	4.7	.033	0.54
SCS		17.54	21.91	4.37				23.08	1.17					5.54				
IYP Pre		(7.29)	(8.78)					(8.16)										

Note. SCS has inverse scoring where high scores are better. Cohen's *d* effect size .20 small, .50 medium, .80 large. ^a Eyberg Child Behavior Inventory Problem Scale. ^b Eyberg Child Behavior Inventory Intensity Scale. ^c SCS = Social Competency Scale.

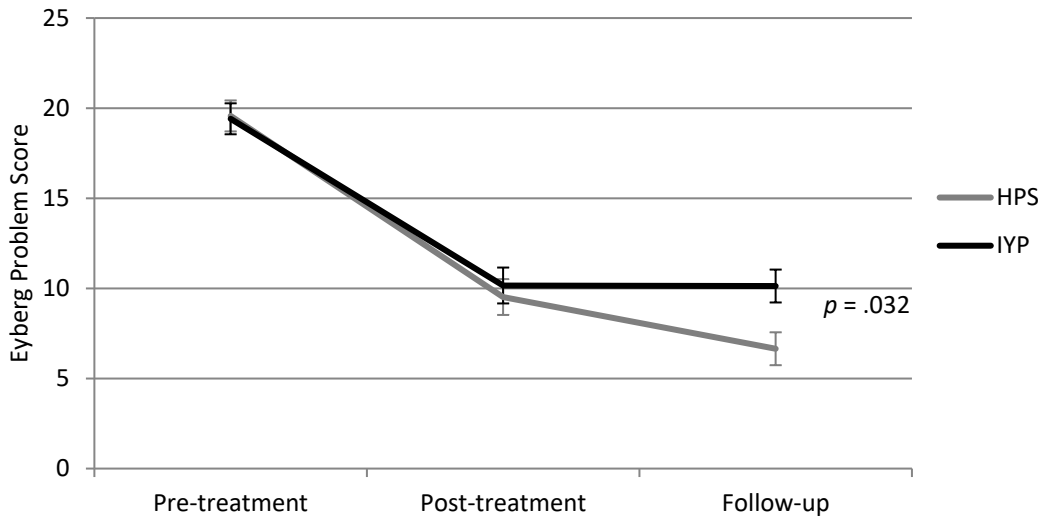


Figure 7. Eyberg Problem scores mean change

Error bars denote standard error; p values are for post- to follow-up analysis of variance. Those in HPS continued to make improvement post-treatment to follow-up while those in IYP remained the same. ANOVA across all three time points showed the effect of treatment pre-treatment to follow-up favoured HPS and was significant ($p = .032$).

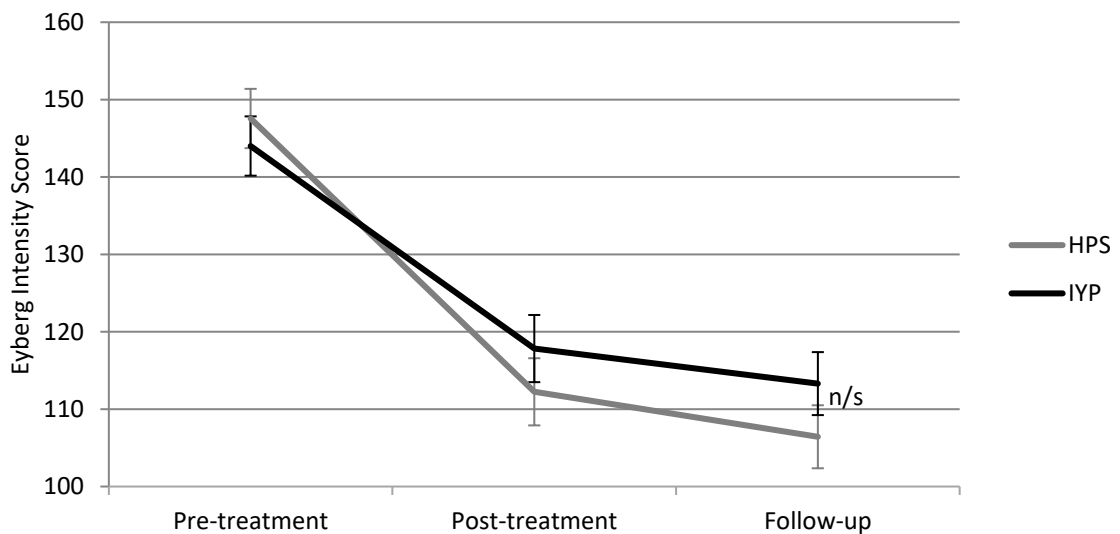


Figure 8. Eyberg Intensity scores mean change

Error bars denote standard error; p values are for post- to follow-up analysis of variance. Although outcomes were better for HPS at both time points ANOVA across all three time points showed this difference was not significant.

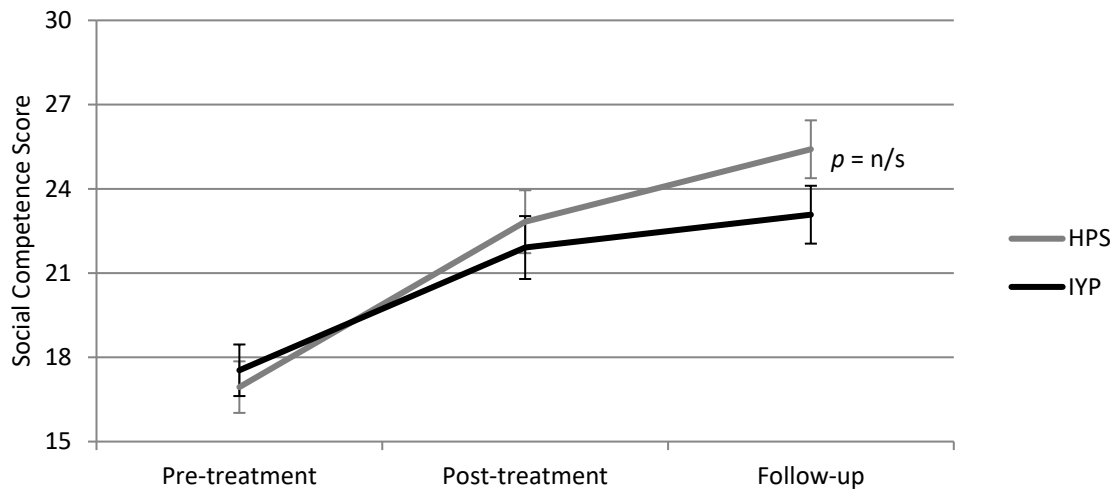


Figure 9. Social Competence scores mean change

Error bars denote standard error; p values are for post- to follow-up analysis of variance. Higher scores indicate better social competence. ANOVA across all three time points showed the effect of treatment showed some benefit for those in HPS, but the difference was not significant at post-treatment nor at post-follow-up. However, the difference from baseline to follow-up was significant ($p = .033$) (see Table 12).

Percentage in clinical range over time

A secondary outcome was to measure the effect of HPS on those participants with baseline scores in the clinical range over the course of treatment and at follow-up. The clinical cut off was defined as T scores $T > 60$ ($ECBI-P \geq 15$, $ECBI-I \geq 131$). The clinical cut-off point on SCS was defined as scores ≤ 17 . The number of participants in the clinical range at each time is summarised for each measure in Table 13. Some participants reached clinical status on one measure and not another, therefore the number of those in the clinical range varies between measures. The primary measure was ECBI-P, and of the 63 participants in HPS there were $n = 51$ in the clinical range at pre-treatment. This reduced at post-treatment ($n = 9$) and at follow-up ($n = 6$). The change in clinical status for those in IYP was smaller. Of the $n = 63$ participants there were $n = 45$ in the clinical range at pre-treatment, $n = 18$ at post-treatment and $n = 14$ at follow-up. Chi-square tests compared the difference in the percentage of participants in the clinical range on ECBI-P at post-treatment between groups. Results showed there was a smaller percentage of HPS participants (17.6%) in the clinical range at post-treatment compared with IYP (40%) and the difference was significant, $\chi^2(1, n = 96) = 5.91$, $p = .015$. At follow-up the difference remained significant, $p = .020$ (HPS 11.8%, IYP 31.1%).

The other child behaviour measures (ECBI-I and SCS) were also analysed to establish if they supported the trend seen in the primary measure. The trend for greater improvement in HPS participants was supported in the SCS measures at post-treatment, $p = .049$ (HPS 34.2%, IYP 57.2%) and at follow-up, $p = .027$ (HPS 23.7%, IYP 48.6%) but the difference in response on ECBI-I did not reach significance at post-treatment, $p = .413$, (HPS 36.9%, IYP 45.55%) or at follow-up, $p = .132$, (HPS 23.9%, IYP 38.6%) (Table 13 and Figure 10).

There was a small number of participants whose data were not available at follow-up; HPS $n = 4$, IYP $n = 2$ and for these last observation carried forward was implemented. This analysis did not include the small number of participants who were in the non-clinical range on ECBI-P at pre-treatment for HPS ($n = 12$) and IYP ($n = 19$). Of these, $n = 3$ HPS participants deteriorated at post-treatment to be in the clinical range but then improved at follow-up to be in the non-clinical range. The remaining $n = 9$ participants stayed in the non-clinical range. In IYP $n = 1$ moved into the clinical range at follow-up. The remaining $n = 18$ participants stayed in the non-clinical range.

Table 13. Change in clinical status for those in the clinical range at pre-treatment

Measure	Group	Clinical status							
		Clinical range		Change		Clinical range		Change	
		Pre	Post	n	p	Follow-up	n	p	
ECBI-P ^a ≥15	HPS	51	9	42		6	45		
	IYP	45	18	27	.015	14	31	.020	
ECBI-I ^b ≥131	HPS	46	17	29		11	35		
	IYP	44	20	24	.413	17	27	.132	
SCS ^c ≤17	HPS	38	13	25		9	29		
	IYP	35	20	15	.049	17	18	.027	

Note. ^a Eyberg Child Behavior Inventory Problem Scale. ^b Eyberg Child Behavior Inventory Intensity Scale. ^c SCS = Social Competency Scale. Clinical range is based on $T > 60$ and equates to ECBI-P ≥ 15 and ECBI-I ≥ 166 . Clinical cut point on SCS was set at ≤ 17 .

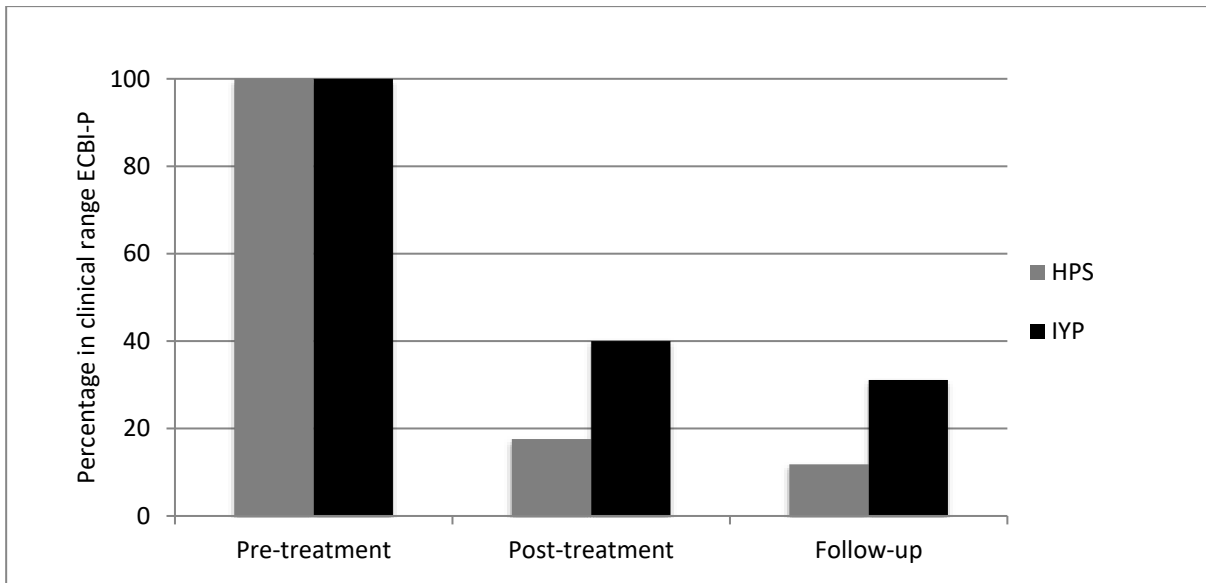


Figure 10. Percentage in clinical range across time for each treatment group

Numbers needed to treat

These results show that the addition of HPS resulted in more participants with pre-treatment scores in the clinical range moving into the normal range on ECBI-P at post-treatment, compared with IYP alone. The number needed to treat to move one more participant into the normal range at post-treatment is five (see Table 14).

Table 14. Numbers needed to treat

Group	Event rate (ECBI-P)	Absolute difference	NNT
Experimental HPS	82.4	22.4	5
Control IYP	60.0		

Retention and engagement

Retention of participants in the trial and engagement in IYP sessions was compared between the treatment groups. The overall retention in the trial was high for both groups. Of the 126 participants recruited, data were collected for $n = 123$ (98%) at post-treatment and $n = 115$ (92%) at follow-up (Figure 6). Overall engagement in IYP sessions was high (83% completed). Those in HPS who did not complete IYP ($n = 7$) was less than half compared with those receiving IYP alone ($n = 16$). The reasons for participants not completing the IYP programme varied, including moving away, being too busy, legal issues (e.g., law enforcement, custody, access to children), childcare, mental health problems and stress. There were two participants who declined HPS after signing informed consent and randomisation (but they completed IYP); five HPS participants did not complete the IYP programme and did

not complete HPS; and two participants did not complete IYP but chose to continue with HPS. All participants remained in the analysis as per intention-to-treat design.

I used chi-square analysis to examine the relationship between treatment group and those who achieved 70% attendance at IYP sessions and showed that there was a strong relationship between treatment group and attendance and this was significant, $\chi^2(1, n = 93) = 4.97, p = .026$. This indicates those receiving HPS had better attendance than those receiving IYP (Table 15).

Table 15. Number and percentage of participants with 70% engagement

Group		70% attendance		Total
		No	Yes	
HPS	<i>n</i>	11	52	63
	(%)	(17.5)	(82.5)	(100)
IYP	<i>n</i>	22	41	63
	(%)	(34.9)	(65.1)	(100)
Total	<i>n</i>	33	93	126
	(%)	(26.2)	(73.8)	(100)

Chi-square 4.97

Child behaviour scores in per-protocol analysis

ANOVA analysis was carried out to test if HPS had additional benefit for all those who complied with the treatment protocol. Those who met per-protocol criteria had attended more than 70% of IYP group sessions, at least 70% of home visits (for those in treatment group), and they had complete data for each time point. Results showed that for those participants who complied with the treatment protocol, there was additional benefit of HPS at follow-up and the difference was significant on all three measures: ECBI-P $F(1,83) = 4.7, p = .03$; ECBI-I, $F(1,83) = 4.8, p = .032$; SCS $F(1,83) = 4.4, p = .039$ (see Table 16). When comparing all those with high attendance at IYP there was a difference between the groups in child behaviour scores, demonstrating that attendance at IYP alone did not explain this difference. Other factors may include HPS adding “dose” or it may be the content of HPS or both.

Table 16. Per-protocol child behaviour scores pre–post-treatment

Measure	Pre- to post-treatment							Post-treatment to follow-up						Pre-treatment to follow-up				
	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>F</i> (1,90)	<i>p</i>	<i>d</i>	Follow- up <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>F</i> (1,83)	<i>p</i>	<i>d</i>	<i>M</i> change	Difference in <i>M</i> change	<i>F</i> (1,83)	<i>p</i>	<i>d</i>
ECBI- P ^a	HPS (<i>n</i> = 48)							HPS (<i>n</i> = 44)						HPS (<i>n</i> = 44)				
	IYP (<i>n</i> = 44)							IYP (<i>n</i> = 41)						IYP (<i>n</i> = 41)				
HPS	20.29 (6.98)	8.71 (7.81)	11.58				6.32 (7.30)	2.39					13.97					
				1.24	.45	.506	.197			3.39	4.18	.044	.68	9.34	4.63	4.7	.033	.771
IYP	19.39 (6.98)	9.05 (7.81)	10.34				10.05 (7.29)	-1.00										
ECBI-I ^b	HPS	150.73 (28.14)	112.81 (36.47)	37.92			105.50 (33.35)	7.31					45.23					
	IYP	145.07 (28.14)	116.93 (36.47)	28.14	9.78	2.2	.139	.440	.54	6.77	1.07	.305	.35	28.68	16.55	4.8	.032	.729
SCS ^c	HPS	16.23 (7.21)	23.10 (9.34)	6.87			25.36 (8.38)	2.26					9.13					
	IYP	16.98 (7.22)	22.43 (9.34)	5.45	1.42	.75	.390	.255	0.16	2.10	1.22	.273	.50	5.51	3.62	4.4	.039	.709

Note. ^a Eyberg Child Behavior Inventory Problem Scale. ^b Eyberg Child Behavior Inventory Intensity Scale. ^c SCS = Social Competency Scale. SCS has inverse scoring where high scores are better. Cohen's *d* effect size .20 small, .50 medium, .80 large.

Family Questionnaire child behaviour measures

The Family Questionnaire (Sturrock et al., 2013) measures of child behaviour supported the findings of the ECBI showing all participants, irrespective of treatment group, made significant improvement on all factors at post-treatment and follow-up ($p < .001$). ANOVA between treatment groups at post-treatment showed no significant difference ($p > .05$). Additional analysis to compare change from baseline to follow-up did not show any significant difference between the groups. There was a small variation in the numbers for each group as some participants did not answer all questions on each domain or stated “Did not know” (see Table 17).

Table 17. Comparison of treatment effect on Family Questionnaire measures of child behaviour

Factor	Group	Pre- to post-treatment						Pre-treatment to follow-up HPS (<i>n</i> = 57) IYP (<i>n</i> = 56)			
		Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>p</i>	<i>d</i>	Follow-up <i>M</i> (<i>SD</i>)	<i>M</i> change	<i>p</i>	<i>d</i>
CD	HPS (<i>n</i> = 61)	27.74 (6.06)	23.98 (5.07)	3.76	0.35	.710	0.09	23.37 (5.38)	4.26	.766	0.08
	IYP (<i>n</i> = 60)	27.72 (6.07)	23.61 (5.07)	4.11				24.18 (5.46)	3.94		
ODD	HPS (<i>n</i> = 61)	34.80 (5.600)	27.70 (6.20)	7.10	0.05	.959	0.01	27.70 (5.99)	6.96	.832	0.06
	IYP (<i>n</i> = 60)	35.6 (5.60)	28.45 (6.20)	7.15				29.12 (5.99)	6.73		
ADHD	HPS (<i>n</i> = 61)	32.05 (7.59)	27.52 (8.10)	4.53	0.07	.950	0.01	26.98 (7.62)	5.32	.601	0.14
	IYP (<i>n</i> = 60)	32.46 (7.59)	27.86 (8.09)	4.60				27.69 (7.62)	4.68		
Self-Control	HPS (<i>n</i> = 61)	53.86 (8.61)	60.21 (8.75)	6.35	0.56	.725	0.09	61.53 (8.21)	8.03	.129	0.41
	IYP (<i>n</i> = 59)	53.98 (8.61)	59.77 (8.75)	5.79				59.41 8.21	5.57		
Anxiety	HPS (<i>n</i> = 61)	26.52 (5.87)	23.64 (5.18)	2.88	0.29	.737	0.08	23.83 (5.13)	3.35	.659	0.14
	IYP (<i>n</i> = 59)	27.18 (5.88)	24.01 (5.18)	3.17				24.35 (5.16)	2.88		
Social Comp	HPS (<i>n</i> = 61)	56.23 (10.86)	61.36 (11.01)	5.13	0.77	.687	0.104	62.13 (11.27)	6.21	.453	0.19
	IYP (<i>n</i> = 61)	56.69 (10.86)	61.05 (11.01)	4.36				60.88 (11.25)	4.70		

Note. CD = Conduct Disorder, ODD = Oppositional Defiant Disorder, ADHD = Attention Deficit Hyperactivity Disorder, Social Com = Social Competence. Cohen's *d* effect size .20 small, .50 medium, .80 large.

Family Questionnaire parent relationship quality

Changes in the quality of parent relationship as measured in the FQ were compared between the groups using ANOVA and showed small changes in relationship for all participants with no additional benefit of HPS over IYP at post-treatment (see Table 18).

Table 18. Change in parent relationship

Group <i>n</i>	Pre- to post-treatment				
	Pre-mean (<i>SD</i>)	Post mean (<i>SD</i>)	Mean change	<i>F</i> (1,67)	<i>p</i>
HPS (<i>n</i> = 35)	32.34 (3.06)	32.26 (2.95)	-0.08	2.133	.149
IYP (<i>n</i> = 34)	32.13 (3.06)	32.91 (2.95)	0.78		

Effect of ethnicity on treatment response

A sub-analysis was carried out to test if ethnicity affected child behaviour outcomes using ANOVA. Table 19 shows the changes from pre-treatment to follow-up between ethnic groups. There was no difference in baseline scores on each measure between treatment groups and all participants made significant improvement on each child behaviour measure at post-treatment and follow-up ($p < .001$). There was no significant difference on ECBI-P mean change between treatment groups for Māori compared with non-Māori, indicating that ethnicity did not affect outcome at post-treatment $F(1,122) = .66, p = .420$ or at follow-up $F(1,122) = .09, p = .769$. The difference in treatment effect between the ethnic groups was not significant on any of the measures at follow-up, demonstrating that Māori and non-Māori responded equally.

The only measure that showed a difference in response between ethnic groups was ECBI-I at post-treatment. On this measure, parent reports for Māori children had a significantly better response to treatment compared with parent reports for non-Māori children, $F(1,122) = 3.94, p = .049$. However, due to a small *N* and multiple testing this results needs to be viewed conservatively and requires further testing.

Table 19. Pre- to post-treatment child behaviour scores for Māori and non-Māori

Measure	Pre- to post-treatment							Post-treatment to follow-up						Pre-treatment to follow-up				
	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>F</i> (1,122)	<i>p</i>	<i>d</i>	Follow-up <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>F</i> (1,122)	<i>p</i>	<i>d</i>	<i>M</i> change	Difference in <i>M</i> change	<i>F</i> (1,122)	<i>p</i>	<i>d</i>
Māori ECBI-P ^a																		
HPS (<i>n</i> = 20)	19.90 (6.86)	9.55 (7.95)	10.35					5.70 (7.62)	3.85					14.20				
IYP (<i>n</i> = 19)	18.42 (6.86)	10.84 (7.95)	7.58	2.77				8.47 (7.62)	2.37	1.48				9.95	4.25			
Non-Māori ECBI-P																		
HPS (<i>n</i> = 43)	19.42 (6.11)	9.51 (6.78)	9.91		.66	.420	.44	7.09 (5.97)	2.42		.506	.478	.39	12.33		.086	.769	.16
IYP (<i>n</i> = 44)	19.84 (6.77)	9.86 (18.27)	9.98	-0.07				10.84 (8.02)	-0.98	3.48				9.00	3.33			
Māori ECBI-I ^b																		
HPS (<i>n</i> = 20)	145.85 (30.21)	102.85 (34.43)	43.00					102.35 (32.29)	0.50					43.50				
IYP (<i>n</i> = 19)	133.63 (30.21)	115.32 (35.32)	18.31	24.69				105.16 (32.29)	10.16	-9.66				28.47	15.03			
Non-Māori ECBI-I																		
HPS (<i>n</i> = 43)	148.35 (4.607)	116.61 (5.250)	31.74	2.17	3.94	.049	1.08	108.33 (4.924)	8.28		2.424	.122	-.68	40.02		.273	.602	.29
IYP (<i>n</i> = 44)	148.48 (4.554)	118.91 (5.190)	29.57					116.82 (4.868)	2.09	6.19				31.66	8.36			
Māori SCS ^c																		
HPS (<i>n</i> = 20)	18.45 (7.29)	25.30 (8.77)	6.85					28.65 (8.06)	3.35					10.20				
IYP (<i>n</i> = 19)	18.47 (7.29)	22.05 (8.77)	3.58	3.27				22.37 (8.06)	.323	3.03				3.90	6.30			
Non-Māori SCS ^c																		
HPS (<i>n</i> = 43)	16.23 (7.29)	21.67 (8.77)	5.44		.73	.395	.42	23.91 (8.07)	2.24		.942	.334	.53	7.68		2.764	.099	.86
IYP (<i>n</i> = 44)	17.36 (7.29)	21.84 (8.77)	4.48	0.77				23.39 (8.03)	1.55	0.69				6.03	1.65			

Note. SCS has inverse scoring where high scores are better. ^aEyberg Child Behavior Inventory Problem Scale. ^bEyberg Child Behavior Inventory Intensity Scale. ^cSCS = Social Competency Scale.

Figure 11 shows change in child behaviour ECBI-P scores for Māori and non-Māori between treatment groups across time. Treatment was effective for both ethnic groups and there was no significant difference in effect between ethnic groups.

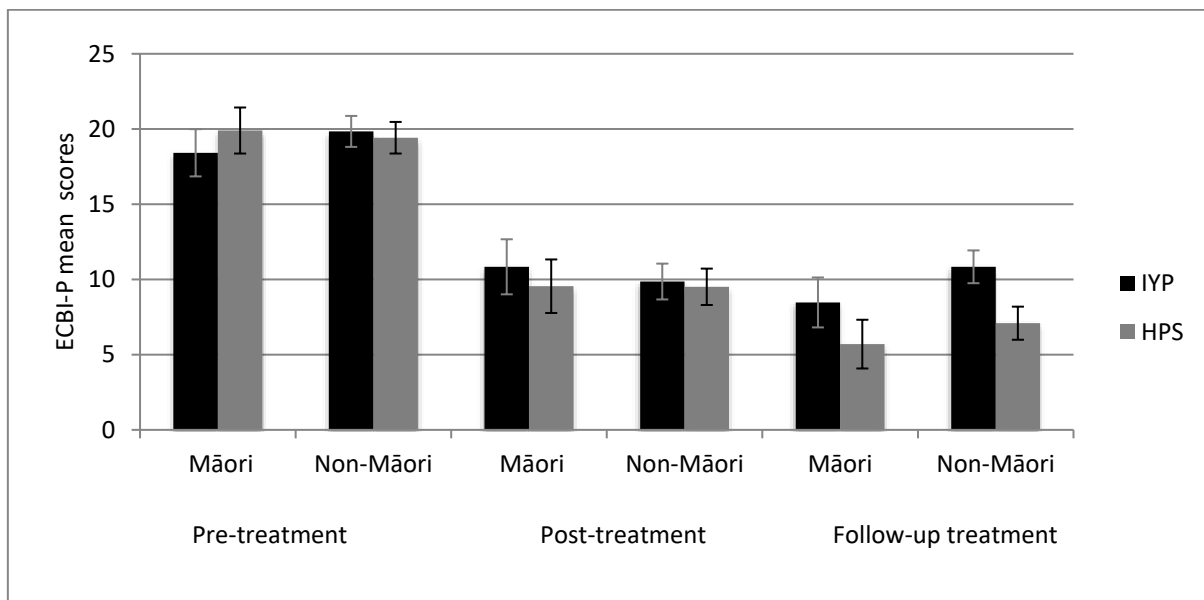


Figure 11. Effect of treatment on ECBI-P scores for ethnic groups across time

Error bars denote standard errors.

Numbers needed to treat for Māori

Māori response to treatment was similar to that of non-Māori. Analysis of Māori participants in the clinical range on ECBI-P at baseline showed the numbers needed to treat to get one further participant into the non-clinical range at post-treatment was seven (see Table 20).

Table 20. Māori participant numbers needed to treat

Group	Event rate (ECBI-P)	Absolute difference	NNT
Experimental HPS	12/15 = 80%	13%	7
Control IYP	8/12 = 67%		

Note. NNT = Number to treat

Effect of parent mental health problems on treatment response

Additional analysis was carried out to consider if parental mental health problems were related to treatment effect. Table 21 shows the number and percentage of participants with mental health problems at pre-treatment and six-month follow-up. Participants who reported mental health problems at pre-treatment were evenly distributed between the groups. At baseline, more than one third of participants reported experiencing depression in the last 12 months. Twenty-six percent of the sample reported other mental health problems. The number

of those who identified problematic drug and alcohol use was small at 5.6%. Mental health measures were not calculated at post-treatment, as the recall period for the measures was 12 months and post-treatment data was collected inside this time period.

Table 21. Participants with mental health problems at pre-treatment and follow-up

Mental health problems	Group	Pre-treatment			Follow-up		
		Total	Mental health problems		Mental health problems		
		<i>n</i>	<i>n</i>	%	<i>n</i>	<i>n</i>	%
Depression	HPS	63	22	34.9	58	18	31.0
	IYP	63	27	42.9	56	18	32.1
	Total	126	49	38.9	114	36	31.6
Other mental health problems	HPS	63	11	17.5	58	11	19.0
	IYP	63	15	23.8	56	11	19.6
	Total	126	26	20.6	114	22	19.3
Alcohol and drug problems	HPS	63	2	3.2	58	2	3.4
	IYP	63	5	7.9	56	1	1.8
	Total	126	7	5.6	114	3	2.6

A sub-analysis of those participants who reported one or more mental health problem at pre-treatment was carried out using ANOVA to identify if the presence of mental health problems affected response to treatment. Results are set out in Table 22. There were 60 participants who reported one or more mental health problems at baseline with slightly more in IYP ($n = 33$) than HPS ($n = 27$). At follow-up there was a reduction in overall numbers reporting mental problems ($n = 47$) and these were evenly distributed between IYP ($n = 23$) and HPS ($n = 24$). All participants, irrespective of mental health problems, made significant improvement over time in both treatment groups ($p = .000$). There was no significant difference between the groups on either of the child behaviour measures, which shows that the presence of mental health problems did not affect response to treatment, according to the outcome measures used (see Table 22).

Table 22. Comparison of treatment effect across mental health profile over time

Measure Group	Pre- to post-treatment					Follow-up			
	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>p</i>	Follow-up <i>M</i> (<i>SD</i>)	<i>M</i> change	Difference in <i>M</i> change	<i>p</i>
ECBI-P ^a Mental Health Problems									
HPS (<i>n</i> = 27)	19.11 (6.86)	10.00 (7.95)	9.11	0.16		6.44 (7.38)	12.67	4.90	.586
IYP (<i>n</i> = 33)	19.94 (6.84)	10.67 (7.93)	9.27			12.17 (7.47)	7.77		
No Mental Health Problems									
HPS (<i>n</i> = 27)	19.92 (5.92)	9.17 (6.86)	10.75	1.48	.608	6.12 (6.39)	13.08	1.73	
IYP (<i>n</i> = 33)	19.94 (7.19)	10.67 (8.33)	9.27			8.59 (7.87)	11.35		
ECBI-I ^b Mental Health Problems									
HPS (<i>n</i> = 27)	142.56 (30.40)	106.96 (34.61)	35.60	12.75		107.64 (34.24)	34.92	10.27	.518
IYP (<i>n</i> = 33)	141.58 (30.39)	118.73 (34.58)	22.85			116.93 (34.52)	24.65		
No Mental Health Problems									
HPS (<i>n</i> = 27)	151.31 (26.34)	116.19 (29.98)	35.12	5.28	.486	104.73 (29.77)	46.58	13.17	
IYP (<i>n</i> = 33)	146.67 (31.88)	116.83 (36.31)	29.84			113.26 (36.42)	33.41		
SCS ^c Mental Health Problems									
HPS (<i>n</i> = 27)	17.96 (7.27)	22.85 (8.73)	4.89	0.17		26.40 (8.42)	8.44	4.07	.957
IYP (<i>n</i> = 33)	18.70 (7.47)	23.76 (8.73)	5.06			23.07 (8.50)	4.37		
No Mental Health Problems									
HPS (<i>n</i> = 27)	16.16 (6.24)	22.81 (7.59)	6.65	3.48	.245	25.58 (7.33)	9.42	3.62	
IYP (<i>n</i> = 33)	16.27 (7.64)	19.87 (9.19)	3.17			22.07 (8.50)	5.80		

Note. ^a Eyberg Child Behavior Inventory Problem Scale. ^b Eyberg Child Behavior Inventory Intensity Scale. ^c SCS = Social Competency Scale.

Change in parenting practice

Table 23 shows the change in parenting practice scores from the Family Questionnaire at post-treatment. Independent t-tests showed that all parents made improvements in parenting practices on most subscales. The addition of HPS resulted in better scores at post-treatment on one scale (inconsistent discipline) and on another scale at follow-up (supervision), but these differences were not significant. This supports the literature on the overall efficacy of the IYP programme itself but does not support the hypothesis that HPS had additional benefit in terms of parenting practices on these measures.

Table 23. Parenting practice

Parenting measure	Pre-treatment		Post-treatment		
	Group <i>n</i>	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> change	<i>p</i>
Poor supervision	HPS (<i>n</i> = 54)	5.38 (0.67)	5.24 (0.62)	0.14	.250
	IYP (<i>n</i> = 57)	5.18 (0.67)	5.22 (0.61)	-0.04	
Positive parenting	HPS (<i>n</i> = 61)	13.93 (1.39)	14.65 (1.01)	0.72	.211
	IYP (<i>n</i> = 61)	13.99 (1.39)	14.36 (1.01)	0.37	
Corporal punishment	HPS (<i>n</i> = 61)	3.73 (0.88)	3.25 (0.62)	0.48	.299
	IYP (<i>n</i> = 61)	3.67 (0.88)	3.34 (0.62)	0.33	
Parental involvement	HPS (<i>n</i> = 61)	12.49 (1.85)	13.26 (1.62)	0.77	.945
	IYP (<i>n</i> = 61)	12.17 (1.85)	12.96 (1.62)	0.79	
Inconsistent discipline	HPS (<i>n</i> = 61)	7.30 (1.87)	5.65 (1.65)	1.65	.093
	IYP (<i>n</i> = 61)	7.01 (1.87)	6.00 (1.65)	1.01	
Lax discipline	HPS (<i>n</i> = 61)	7.82 (1.77)	6.90 (1.53)	0.92	.613
	IYP (<i>n</i> = 61)	8.11 (1.77)	7.03 (1.53)	1.08	
Over-reactive discipline	HPS (<i>n</i> = 61)	8.67 (2.02)	7.13 (1.52)	1.54	.613
	IYP (<i>n</i> = 61)	8.71 (2.02)	7.34 (1.52)	1.37	
Hostile discipline	HPS (<i>n</i> = 61)	4.42 (1.21)	3.77 (0.98)	0.65	.106
	IYP (<i>n</i> = 61)	4.04 (1.21)	3.66 (0.98)	0.38	

Note. Not all participants completed the “poor supervision” questions at pre-course.

Parent satisfaction with Incredible Years® programme

Parents completed a post-course parent satisfaction question (Appendix O) where they rated their response to specific parenting skills and competencies on a 7-point Likert scale from extremely useless/difficult (1) to extremely useful/easy (7). Mean scores for the total sample were above neutral on each question, showing high levels of satisfaction for all participants. Overall satisfaction was high in both groups. The use of role-play was the only aspect when there was a difference and showed HPS parents found this technique more useful than parents in IYP. Results are summarised in Figure 12.

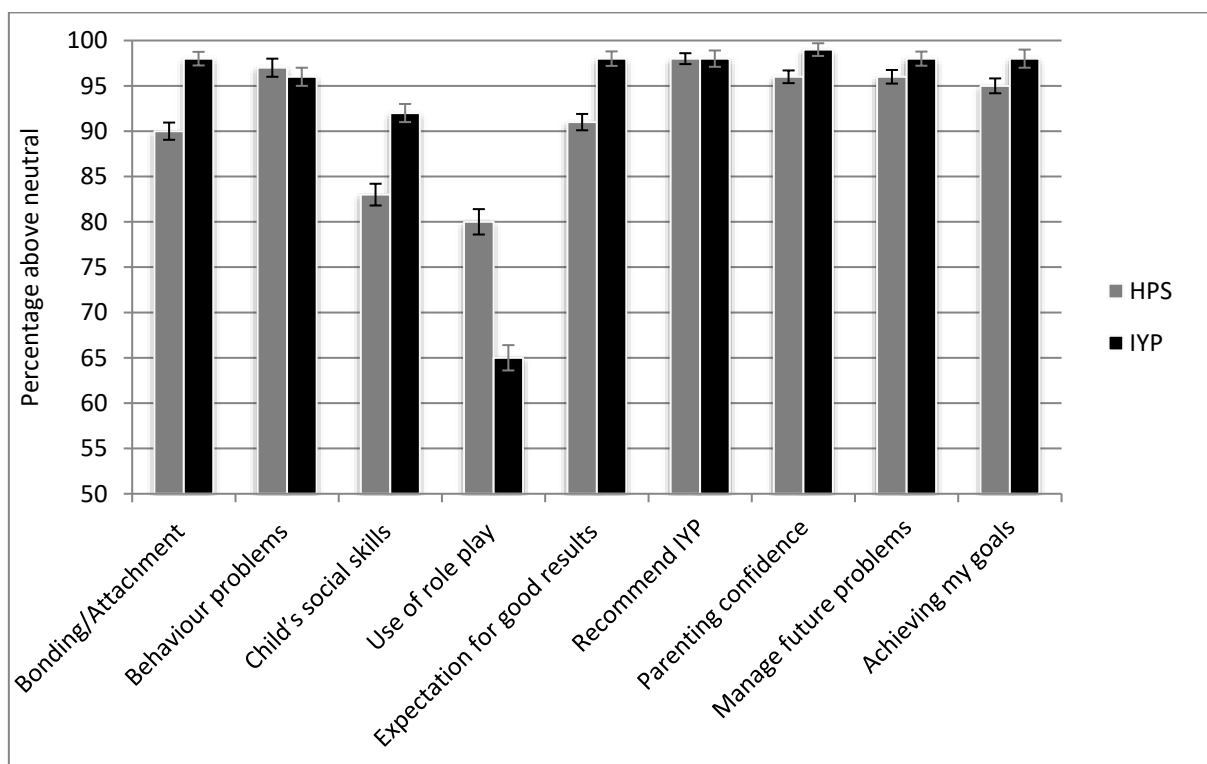


Figure 12. Post-treatment parent satisfaction

Participant confidence at six-month follow-up

Participants completed six-month follow-up questionnaire (Appendix N). Responses were rated on a 5-point Likert scale from not confident/unhelpful (1) to very confident/very helpful (5). The level of confidence was high in both groups at six-month follow-up with 91% (HPS) and 93% (IYP) of participants reporting confidence levels as “confident” or “very confident”. Almost all HPS participants (96%) found the additional support “helpful” and, of these, two thirds found it “very helpful”. There were nine participants in IYP (control) who answered the HPS satisfaction question, which suggested they did not know which group they were in. This may be due to participants receiving home visits carried out by the IYP group leaders as part

of delivering IYP and/or that the name “Incredible Years[®] Specialist Service” was confused with the Incredible Years[®] parent group.

Being Part of the Research Trial

Generally, participants found it helpful to be part of the research trial with 87% of HPS participants reporting it was “helpful” or “very helpful” compared with 68% of IYP participants. There was one participant in IYP who felt the research trial was “unhelpful” and no participants in HPS reported it being “unhelpful”. These results indicate the requirements of the research were not seen as onerous and did not impact negatively on participants.

Adverse Events

Therapists were aware of the possibility that treatment could contribute to an adverse event. All families were reviewed in supervision and in the multi-disciplinary team review meetings. There were no reports of adverse events.

Summary of Main Findings

The primary hypothesis that the addition of HPS would improve outcomes at post-treatment was not supported. Both IYP and HPS groups improved significantly on both scales of ECBI and SCS at post-treatment and there was no significant benefit for HPS over IYP on any measure.

The benefit of HPS on secondary hypotheses showed positive results. Firstly, in terms of benefit at follow-up there was a significant difference in scores on ECBI-P and SCS measures of child behaviour at six-month follow-up. This is an interesting finding. It shows that improvement for those who received HPS continued after the IYP group finished and this improvement was greater than for those who received IYP alone.

In terms of the percentage of participants in the non-clinical range on ECBI-P at post-treatment, there was a significant benefit for HPS compared with IYP alone. This demonstrated that more of the highest acuity families in HPS were able to shift out of the clinical range compared with those who received IYP alone. Additionally, these data show that the extra number needed to treat in order to get one more participant into the non-clinical range was just five.

In the per-protocol analysis the result showed that for those with high attendance at IYP and HPS, there was a benefit on the primary variable at follow-up for HPS over IYP. While HPS

improved engagement when all those with high attendance were compared, those who received HPS had better behaviour scores compared with those in IYP alone demonstrating that attendance at IYP alone did not explain this difference. Other factors need to be explored.

In terms of retention and engagement the result was significantly better for HPS. Completion of IYP was 83% for those receiving HPS compared with 74% for those receiving IYP alone. Retention in the trial was greater for HPS with data collected for $n = 62$ participants at follow-up compared with $n = 53$ for IYP.

Finally, Māori responded equally to HPS as non-Māori showing ethnicity was not associated with treatment outcomes. The presence of mental health problems did not affect treatment outcomes. The FQ measures of child behaviour, parent confidence and quality of relationship showed both groups improved and there were no differences detected between the groups on these measures.

Conclusion

The benefits of HPS were not evident at post-treatment, but at follow-up those families who received the additional home parent support had significantly better child behaviour outcomes compared with those in IYP alone. This is promising and suggests that longer term outcomes for families attending IYP may be improved by introducing additional support in the home.

The next chapter presents the qualitative results. These give insight into participants' expectations of the intervention and their experience of receiving the treatment.

Chapter 6: Qualitative Analysis

I have included qualitative data as part of the evaluation of HPS because this allowed the depth of meaning and experience from the parents' perspective to be heard. This chapter covers the methodology, analysis and findings from the narratives collected from parents in the trial.

Data Collection and Analysis Methods

Data from all participants were extracted from their responses to the qualitative questions collected by the research assistant at pre- and post-treatment, and at follow-up. I carried out the initial coding of data extracted from the questionnaires. An independent coder who was an academic trained in qualitative analyses and who had no other role in this research reviewed the coding.

A general inductive approach (Thomas, 2006) was taken to identify meaningful units from interview transcripts and group them into themes and categories. Thomas (2006) states that the purpose of a general inductive approach is "to allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by structural methodologies" (p. 238). Meaningful units of the raw data were coded and links were established to the research objective. A model was then developed showing the relationship of themes evident in the data.

All interviews were carried out by an independent research assistant and recorded either by digital recorder or hand scribed. Another research assistant, who was blind to the treatment conditions and participants' identity, transcribed interview data into a Word document. Transcripts were then imported into the NVivo software. I carried out the initial coding of pre-treatment scripts and developed a description for each category. An independent expert checked the categories and the descriptions. After discussion, codes were refined and the scripts were re-analysed according to the new structure. I then coded the remaining scripts and a second independent expert checked 30% of the scripts for inter-rater reliability. Inter-rater reliability was calculated in NVivo using the Cohen's Kappa coefficient. Cohen's Kappa coefficient is a statistical measure of inter-rater reliability that takes into account the amount of agreement that could be expected to occur through chance. Kappa coefficients below 0.40 indicate poor agreement between raters, coefficients between 0.40–0.75 indicate fair to good

agreement, and those over 0.75 indicate excellent agreement (J. Cohen, 1968; Viera & Garrett, 2005). The percentage agreement was 96.01 and the Kappa coefficient was 0.68. The Kappa coefficient is within the “fair to good” range.

Findings

Pre-treatment

At the pre-treatment interview, and prior to randomisation, all parents were asked, “What benefits do you hope that Incredible Years® will offer you and your family?” All participants had positive expectations for improvement and their comments reflected a desire to be more effective parents, to have more personal skills, and to have a happy calm home. Seven more specific themes emerged from participants’ responses: i) general parenting strategies, ii) child behaviour management, iii) relationships iv) parent self-management, v) giving and receiving support, vi), parent communication and vii) child mood regulation. These themes were organised into three categories of benefit: (1) parenting skills, (2) personal skills, and (3) family and whānau. Table 24 shows the organisation of themes into categories and the frequency with which they were reported.

Table 24. Pre-treatment expectations of all participants attending IYP

Category	Theme (definition)	Frequency
Parenting skills	Parenting strategies (strategies or skills to manage child behaviour)	44
	Child behaviour management strategies (skills to manage specific child behaviours)	38
	Child mood management (skills to manage child emotions)	5
Personal skills	Self-management skills (skills to manage own behaviours, stress, responses, yelling, being consistent)	21
	Support/encouragement (giving or receiving support)	17
Family/whānau	Relationships (any relationship within family and extended family)	36
	Parents’ communication (between parents and between parent and children)	6

In relation to parenting skills, comments from parents about beginning the IYP programme were wide-ranging. For most parents they were simply hoping to “be a better parent” and their expectation was that they would gain new skills to allow them to achieve this. Some made generic comments regarding this, including: “to do things a bit differently”, and “to have some skills to better understand my son”. For others, there were specific child behaviours that they wanted help to change. These comments included techniques for dealing with aggression, non-compliance, and tantrums: “learn how to control tantrums and sleep time” and “more skill for dealing with misbehaviour and non-compliance especially with the children together which is what I struggle with the most”. A smaller group of parents

indicated a need for help with managing their children's emotions (rather than behaviour), suggesting an awareness that emotional responses contribute to behaviour: "she lacks confidence. I want her to feel better about herself".

Comments in relation to personal skills included parents managing their own behaviour and feeling less stressed. Many parents wanted to improve their self-control by "learning new ways to control my temper", to be "more patient with my children" and "not be so negative with them". Others wanted to develop personal "strategies in keeping calm", and many had expectations that there would be "less stress, less yelling", and "less arguments" in the home.

Being more consistent was an expectation for some participants who reported that "people always comment on my inconsistent parenting style and I hope IYP will help develop some consistency in my parenting". Several parents showed insight into their own parenting style and wanted to learn ways to "respond to the children more positively" and have "ways to respond that are not angry or aggressive" so they could be more positive and "not spend so much time always being on his case".

Expectations in relation to personal support and encouragement reflected a need to be connected with "like-minded people" and to be supported "in what we are doing" as parents. Parents described feeling isolated and the "only one with problems". They wanted to "develop a support group" so they could "share stories and to hear other parents' experiences and tools they use". The need for support was a frequent theme but was particularly important for those who did not have family or close friends as one parent reported: "I don't have a Mum so I feel largely unsupported".

Parents had expectations of benefits for the family and whānau that included more "peace and calm in the home" and "better relationships within the family". Their expectations included improved communication between parents "so [we] are on the same page", and "to improve communication between me and [partner] and the kids". Generally, parents wanted to be more enthusiastic about their parenting and were "excited about it [IYP] because it focuses on the positive sides and ways of being, so we don't have to focus so much on the negative as we do at the moment". For many parents they were "hoping to end up being closer to my kids".

Post-treatment

The post-treatment interview asked parents to comment on the benefits they had received from attending IYP. Those who received HPS were also asked about the benefits of HPS (Appendix M). The majority of themes were consistent with those found at pre-treatment; however, two new themes emerged in the personal skill category—personal awareness and

self-regulation. Table 25 shows comparison of frequency of post-treatment themes for those who received IYP and those who received HPS.

Table 25. Post-treatment categories and themes for participants in IYP and HPS

Category	Theme	Frequency	
		IYP	HPS
Parenting skills	General parenting strategies	27	41
	Child behaviour	18	12
	Child mood	27	41
Personal skill	Personal awareness	13	29
	Self-regulation	6	10
	Support/encouragement	11	8
Family/whānau	Relationship	15	27
	Parents' communication	8	12

At post-treatment, participants in both IYP and HPS reported many benefits in terms of general parenting strategies. In particular, both groups reported that the “tools for dealing with misbehaviour are very effective” and it was helpful to learn “new ways of dealing with behaviour instead of stressing about it”. Parents experienced personal support and validation from the IYP group and were encouraged to know they were “not alone” and “could learn from each other”. They also gained confidence and took on new challenges. For example, “IYP prepared me and encouraged me to go on and do further studies, and I am now at Poly-Tech studying Social Services. I have stopped smoking too!” All participants reported some benefit from IYP and there were no parents who reported no improvement. This reflects the generic benefit of IYP for all participants.

While all parents reported positive change in parenting strategies, those in HPS indicated more awareness of their children’s needs and a better “sense of perspective on [my son’s] behaviour”. Many HPS participants reported benefits of building a positive relationship and the importance of “spending quality time with the kids” particularly through play and special time. They felt more confident to do this because now they knew “how to play properly and how to end play”.

There were more comments from parents in HPS than those in IYP about having a better “understanding of children’s emotions and temperament”, being able to see things from their children’s perspective and to understand developmental stages: “I understand more about what is happening for him - about his emotional and social development”. This awareness helped parents to appreciate that often behaviour was “age related and not always naughty”.

As a result, they had insight into adjusting their own life style and commented that they were more “conscious of my own behaviour”. They were able to reflect on their availability and acknowledge that sometimes “you forget when you are so busy with life” and that it helped to “stop the busyness and just be with the kids”. This awareness helped parents to see the impact of their own behaviour on their children and the importance of modelling for children. Some simply stated, “It was me that had to change”.

Generally, those who received HPS made more references to their increased confidence and ability to stay calm: “we have learnt self-control, there is less yelling, screaming and slamming doors now, no more swearing”, “I am a lot calmer”. There were many comments about the wider family being calmer and having a happier home, including “children seem happier”, “it is a lot more pleasant to be around the kids and I am more pleasant to be with too” and “we now do more as a family”. Additionally, sibling relationships improved and now “their interaction between each other is awesome”. Other parents commented on the connection between strong positive relationships and behaviour, stating: “The stronger relationship bond has resulted in more compliance and less need for discipline”.

In summary, post-treatment comments from parents in HPS generally had more reference to behavioural principles compared with IYP parents who commented on behavioural change, but did not show the same insight into why and how behaviour had changed. Comments from HPS participants demonstrated they understood the role and power of modelling, the importance of understanding their child’s needs, and the significance of building a positive relationship in order to achieve pro-social child behaviour. Their comments reflected a better understanding that parents’ role in modifying child behaviour begins with changes in themselves.

Benefits of Home Parent Support

Participants who received HPS were asked to specifically comment on the benefits of HPS. The most common theme mentioned was the support to implement new strategies. This was attributed to the therapist being “able to see what problems I was dealing with and help me on a more personal level” and that “it felt like someone was actually taking an interest and helping us out”. For others it was the dedicated one-on-one time “to focus on specific issues and take the time to do it – it was very helpful”.

Some families receiving HPS did not have a good experience of being parented themselves and therefore did not have a functional “blueprint” for parenting, so found it “really helpful to be shown how to interact with my children. It was good to see how to actually be really

positive when I interacted with them”. Others benefited from specific support to tailor strategies to their children’s specific needs and to apply behavioural principles effectively by getting “further tips on how to implement techniques that work well for our family and knowledge on why she acts the way she does”. Parents appreciated being “taught specific social skill strategies” and “solutions to problems on a weekly basis without being in the group environment”. Some participants found it easier to talk honestly in a “one to one” environment about their specific family issues. This was especially true for those who were not as confident to speak up in the big group. They found the personal support “very beneficial because I am a shy person and in a big group setting I would not raise issues or problems about my boy”. Others stated that they benefited from “having an extra person to talk things through that I wouldn’t bring up in a big group setting”.

For one parent who had learning difficulties, she found the extra support allowed her to have content reviewed in a way that suited her learning: “because I’m dyslexic and because I struggle with reading and writing, she was able to give me extra resources and support and talk through it all which helped me. The ‘one-on-one’ factor was more beneficial for me”. Another participant was not able to generalise the learning from the vignettes to their situation and benefited from extra explanation and reflected that “at first I thought the vignettes were stupid and not relevant, but with my in-home support she made it all relevant for me”.

Participants appreciated that HPS reinforced what was learnt in the group and “helped us stay on track with our weekly goals by giving us mid-week visits”. Being realistic in goal setting and making small changes meant parents could be encouraged to persevere with changes and were more likely to be successful. Being able to “get solutions to problems on a weekly basis” meant they could get “extra tips” when they needed it. This meant they did not feel “stuck”, but got answers quickly and experienced success and gained confidence in the new strategies.

Parents also found it helpful to have “time to reflect on learning, and to have concepts from the group reinforced and backed up”. Knowing they could ask their HPS therapist and that the response would be consistent with IYP principles avoided confusion on different parenting philosophies. Parents appreciated that the HPS therapists were affirming and validating, stating: “she gave us lots of praise which we loved to hear because we never do it”, “it’s great having encouragement and support” and “it was fantastic support and coaching for our parenting”. For others the benefits were “Heaps! It has given me confidence to get back to being the Mum I used to be” and others felt “empowered to ask questions”.

The benefit for extended family was having the therapist visit the home and to work with the children and model strategies. One parent was surprised when “my 7-year-old had a big tantrum she helped me to ignore it and it worked! It was really beneficial seeing the strategies work with my children”. The experience of seeing how strategies work was valuable and she was encouraged to try again. Other benefits for the extended family were including the partner or whānau to support changes in parenting style. On several occasions benefits were seen after the therapist “talked with my husband and he changed some of his ways of parenting. Now he does not yell at the kids”. Another father who found it hard to explain new strategies to his partner, who was resistant, found it helpful when the therapist “brought a different view... and could explain it in a way [my partner] could hear”. Benefits within the wider family included improved relationships resulting in having more fun, being happier, needing to use less discipline and a calmer home.

Overall, there were many comments from participants in HPS that demonstrated their capacity to reflect on changes in themselves and their children, for example, “I am conscious of my own behaviour now” and “I have learnt how to deal with things better – and can see she’s a pretty good kid”. Others commented that “it was nice to be able to reflect on things together” and “I am more aware of my temperament. Taking a step back before acting - I’m more mindful and I only have the power to change myself”.

Four participants reported no additional benefit of HPS. However, one had dropped out of IYP and therefore did not benefit from the group learning and experience: “I didn’t really see too many changes in my child because I didn’t get to attend many classes”. Two others felt they gained enough from the IYP group and declined the additional support. The fourth person had expectations that HPS would address historical trauma and “change her son”. She was disappointed because “it didn’t change my son’s anger problems”. This highlights that the benefit of HPS is in the combination with IYP and that, for some children, behaviour change takes longer, especially when it exists in the context of wider systemic issues, serious illness and trauma.

Six-month follow-up

At six-month follow-up participants were asked to comment on changes they had noticed in their child’s behaviour and changes in their relationship with their child. Participants were also asked how helpful it was to be part of the research trial (Appendix N). Six themes emerged relating to changes in child behaviour, and four themes relating to changes in relationships. These are summarised in Table 26.

Table 26. Follow-up interview

Category	Theme (<i>definition</i>)	Frequency	
		IYP	HPS
Changes in child behaviour	Better social skills (friendship skills, taking turns, talking listening)	6	21
	Emotional regulation (ability to self-regulate)	26	33
	Happier, more confident (reference to improved confidence or being happier)	5	10
	More compliant (improved compliance due to new strategies e.g., praise, rewards, ignore)	20	19
	Better relationships (improved relationships, getting on better, helpful, wanting to please)	8	17
	No improvement or regression (reference to no change or regression)	6	5
Relationship with child	Relationship has improved (includes reference to bonding respect, love and affection)	39	38
	Parents' role in improving relationship (reference to awareness that change in parenting contributed to improved relationships)	20	30
	More special time (reference to having more special time and this contributing to improved relationships)	13	11
	No improvement (or always been good)	4	2

Analysis of comments in relation to changes in child behaviour showed all participants reported change in child behaviour. Those in IYP often stated this change without demonstrating an understanding of why the behaviour changed. For example, “things run smoothly now” and “we talk more”, “he is happier”. More HPS participants stated their understanding of behavioural principles and complexity in parent-child relationships demonstrating some reflective capacity to link changes in child behaviour with change in their own behaviour. For example, one parent reported that it was about “my understanding of factors impacting on his behaviour and my part in it” and the need for “more understanding of how their little minds really work, like you can use different tones of voice and judge his reaction to what I saying”. HPS participants made reference to meeting their children’s needs and responding to them accordingly, for example, “I think about what is going on and the dynamics of it and how to handle it better” and not “reacting but responding to his needs. Focusing on his good points and not so much on his negative points”. Being more consistent and having more structure in place they noticed “less arguments about certain things because we have more things in place like routines and strategies”.

Analysis of comments in relation to improvements in children’s social skills showed HPS parents noticed their child’s ability to interact with others, “he listens to me a lot more and gets along with others a lot better”, making friends “he has two friends now and gets along a lot better”, and more pro-social interactions, “he is a lot better at taking turns and can sit, and

line up, and wait, and he doesn't always have to be first". Others noted improvements in sibling rivalry stating that "now they can sit there and have a turn each and they are not at each other".

In contrast, most comments from participants in IYP made reference to changes in the child's social skills with fewer references to interaction with others: "he talks more to me" and "he does listen when asked and told to do something". Other comments were more generic with no specific examples: "he is a lot nicer to other people" and "he has more empathy".

Emotional regulation was a common theme from participants across both treatment arms. Many parents commented on their child's improved ability to regulate emotions: "he is no longer aggressive", "he is much better at regulating his emotions" and "he has learned to self-regulate". Several parents from HPS described in detail how their child achieved this: "He will go down and shut the door and he'll come out when he has calmed down. When the intensity is less, he can bring himself out of it and come back". HPS participants were also able to articulate their role as parent in helping them: "I learnt that the way I was responding to him was only escalating things", and "if I remained calm then he did as well".

In terms of relationships, comments from participants in HPS indicated a level of insight regarding relationships with their child, greater understanding of parenting concepts and increased confidence as parents. One parent reflected that being able to "look at how I actually parent that was the biggest thing I gained. It has made me much more mellow in my parenting. The kids come to me for more things". Others were able to see "the benefits of play that made us realise we didn't need so many rules" and were able to eliminate a lot of unnecessary rules. These parents understood that time spent with their children built relationships and was a form of "investment" that paid off with better behaviour. Some parents showed an increased capacity to "think deeply about the family and recognise that parents have to change first then the kids will". They applied their "improved knowledge of the effects on [child] behaviour", and were able to look at their own behaviour and make changes "especially my behaviour and how to help by being calmer myself".

When reflecting on the parent's role in changing child behaviour, those in HPS commented on a greater understanding of their children, behavioural principles and how they operate. One parent stated, "it gave me the ability to understand him and why he does the things he does – the reasons behind his behaviour and I now know about or know what to look for". Others said, "I learnt that it was about me, and how I deal with things. I learnt to see things from his point of view", and "we learnt a lot of behaviour was age related and just a phase". Having an

understanding of the reasons for their child's behaviour and to "stand in their shoes" allowed parents to be more flexible, focus on positives, and be more effective. Even if the parent felt their child's behaviour had not improved they felt they were better equipped to handle it: "her behaviour hasn't changed much but we are handling it better" and they had "more insight into how to deal with behaviour". For one parent this intervention "has been life changing in an incredibly positive way for our little family, I am more confident. I am able to spread my time out more. HPS has boosted my confidence".

Participants in IYP made similar comments about changes in their own behaviour, for example: "I have learnt to be more patient. I have learnt I had to put time in through play if I wanted the kids to be better behaved", and "I spend more energy on positive behaviours rather than focusing on negative things". However, for these participants, the depth of personal growth and insight was not as evident and the focus was more on changes in behaviour without reference to why these changes were happening. For example, "it helped me to deal with him better". While these changes are encouraging, there was a lack of expressed understanding of why or how these changes were possible.

Overall, the ability to generalise learning and apply behavioural principles to modify their own behaviour was more evident in comments made by parents who had received the additional support in the home. However, there was a common theme amongst all participants that the IYP programme was helpful: "it was the best programme I have ever attended" and they would recommend others attend: "everyone should do this, there are so many things I learnt from the programme". The length of the course did have some negative impact initially but by the end they were "glad to have done the course. We were reluctant to do the course because of the time commitment but it was well worth it". When the course was finished some parents experienced a sense of loss and "felt like something was missing this week because IY had finished". The informal support that developed was meaningful with friendships forming and these were often maintained after the groups ended.

When asked about being part of the research trial, participants' responses indicated a general recognition that answering the questions helped participants reflect on change and generally this was positive. For example, going over the questions "makes you realise what life has been like over the last few months and how grateful I am with my children because you tend to forget stuff" (IYP). Other participants reflected that knowing the research assistant was going to return and ask the same questions helped focus attention to changes, "I was thinking ahh she is going to come back with all these questions and how am I gonna be this time?"

(IYP). A benefit reported by several participants was that it prompted them to reflect on strategies that they had learned and could implement and when there was some regression in behaviour, “it gives you a reminder of what you have learned at the course and it just brings things back like – oh I could try that again” (HPS). Additionally, being part of the research and thinking about the questions helped some participants to reflect on issues that they had not thought of and in particular their role in making change in their families: “There are questions in the research that you know I didn’t really question myself and would never have thought of questioning. So yea, it has made me identify some things where I need to step up” (HPS).

Participants did not indicate any negative effect of being involved in the research, even those who did not receive the additional support of HPS. However, some found the length of the questionnaire and the repetition of questions tedious. There is some evidence that being part of research and being asked questions has an effect of its own. When participants know they are going to be asked the same questions they are likely to try harder especially if they receive affirmation and positive attention from the researcher. The Hawthorn effect may account for some change in individuals because subjects who know they are in an experiment can modify their behaviour from what it would be without that knowledge (Adair, 1984).

Summary

At pre-treatment interviews participants expressed a desire to be effective parents and had an expectation that IYP would help them. Many felt disempowered as parents because their children “did not respect” them, they were a “push over”, and there was a “lot of stress and yelling” in the home. All participants wanted help to get back in control and were motivated to change. By participating in the course, participants had moved from the contemplative stage and were ready to take action, as described in the transtheoretical model of change (Prochaska & DiClemente, 1982). This shift in motivation is important for change to be realistic (Miller & Prinz, 2003). Individuals need to have the desire to acquire new knowledge and master it so that the change is sustained (Williams, Kessler, & Williams, 2015). Capitalising on this motivation by providing additional support was expected to maximise outcomes for vulnerable families.

Participants had an expectation that they would gain more parenting skills and improve their personal skills so they would be a “better parent”. As they gained knowledge and strategies, their competence improved, contributing to increased self-efficacy. As parents became more

effective in parenting tasks and gained more personal skills, this resulted in a more functional family and whānau. Learning new parenting skills to manage challenging behaviour and having skills to manage their own stress helped parents build self-efficacy and this ultimately improved their parenting and benefited the whole family and whānau. Figure 13 is a visual representation of the relationship between the themes in this study.

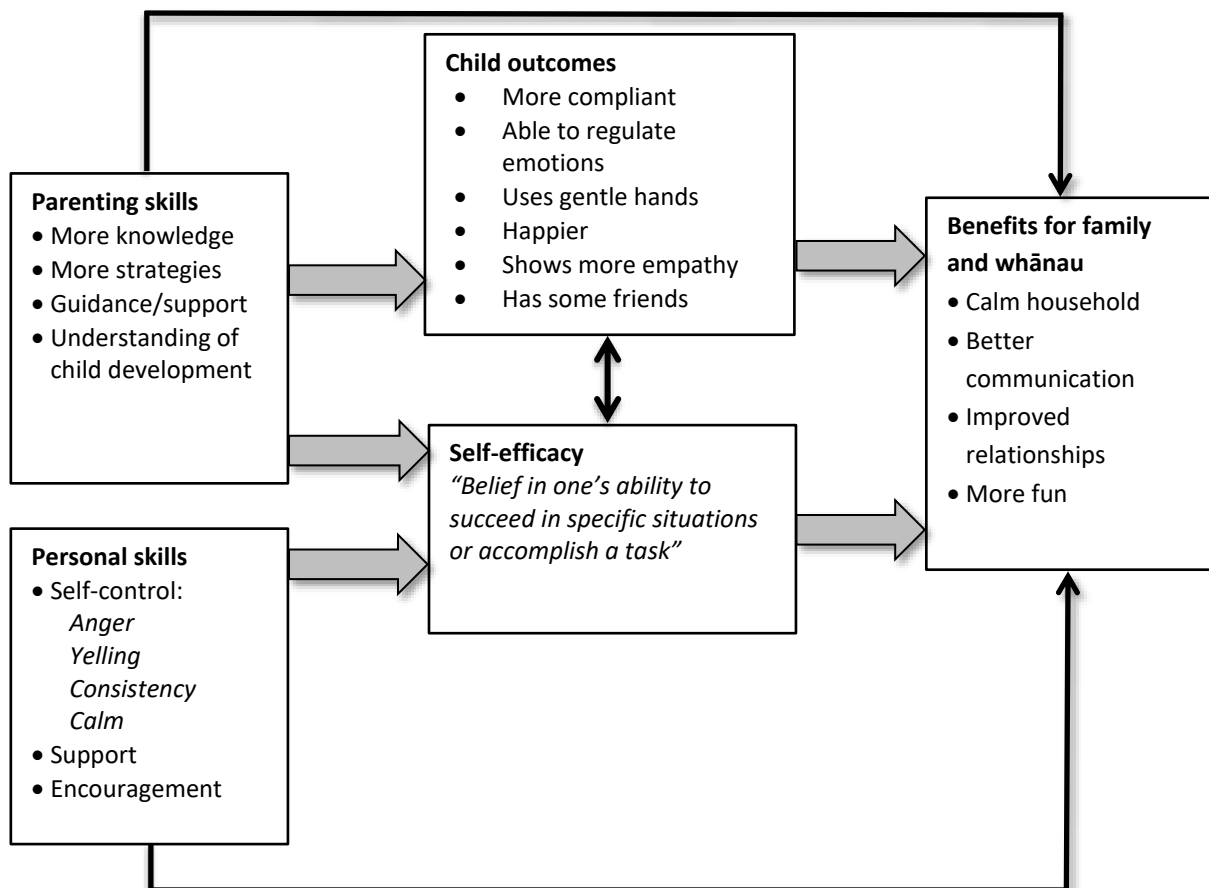


Figure 13. Relationship between themes in this study

Self-efficacy is gained through repeated mastery experiences achieved by setting realistic goals, getting feedback and being supported to achieve new skills (Bandura & Cervone, 1983). HPS was able to provide multiple mastery experiences for parents with structured support (modelling, coaching, cognitive restructuring, affirmation) to reinforce success and build confidence. This meant that when they did have a negative experience they were more resilient to the impact of this, and could reflect on why it was a negative experience, how to change it, and then try again.

By the end of the IYP programmes, all parents reported benefits in terms of increased parenting skills and personal skills, and as a result were more confident and competent as parents. They now had “tools for dealing with misbehaviour that were effective” and so their

homes were more harmonious, more fun and they enjoyed better communication. The key to successful change for participants attending group programmes was the collaborative and supportive style of facilitation where parents can safely raise issues that concern them and receive sufficient support to build confidence, autonomy and independence (Eames et al., 2010). However, for some participants, the size of the IYP group was a barrier to seeking individual help within the group. Without the opportunity to be heard and to clarify their thinking (as offered by HPS), these parents were at greater risk of becoming discouraged and possibly drop out of the course.

Those who received the additional HPS benefited from individualised support to tailor the strategies for their children and to address specific barriers in their home. Being able to clarify concepts and get solutions to problems quickly meant they made progress with new parenting strategies and were encouraged by their success to remain engaged in the programme. As a result, their narrative showed a greater depth of understanding of behavioural principles (modelling, praise, reinforcement, consistency, coaching), compared with participants in the IYP treatment arm. Additionally, those in HPS made more comments indicating their capacity to reflect on behavioural patterns not only for their children but also for themselves as well. The cycle of mastery and competence gained momentum and parents developed self-efficacy.

Strengths and Weakness of Study

This qualitative study gives a voice to the parents in the study and allows their stories and experience to be included in the analysis. Their words remind us that there are actual children and families behind the numbers in the quantitative analysis. Some of their stories evoked an emotional response in me and because I was not blind to their treatment group this could be a source of potential bias. However, I did ensure that the coding was checked independently and the chapter was reviewed by an independent expert.

Conclusion

Generally, all participants reported positive experiences from attending the IYP group programme. Those who received the additional HPS were able to express an understanding of overall principles for behaviour change that essentially involved them changing the way they interact with their children. This insight is likely to be a contributing factor to the maintenance of behaviour change over time. These results, along with the quantitative results, are discussed in the next chapter.

Chapter 7: Discussion

In my clinical experience working in ICAMHS, I have seen the growing levels of challenging behaviour in young children, the distress of parents seeking help and the concerning nature of out of control behaviour for families. The aim of this study was to assess whether providing a Home Parent Support intervention alongside the Incredible Years[®] parenting programme would be a way to assist the most vulnerable families to improve outcomes.

To my knowledge this is the first evaluation of a home visiting enhancement for vulnerable families while they attend the IYP group programme. The primary aim of this randomised controlled trial study was to evaluate the effectiveness of HPS on child behaviour at post-treatment in vulnerable families. Results of the primary outcome showed that all participants made significant improvement over the course of treatment and there was no significant additional benefit for those receiving HPS at the post-treatment point. However, while the primary hypothesis was not supported, secondary analyses showed benefits for families at six-month follow-up, suggesting that this enhancement may have benefits for families in the longer term. Those families who received HPS had better child behaviour scores at follow-up, greater attendance, fewer child behaviour scores in the clinical range, and the intervention was equally effective for Māori families.

The value of adding home visiting as a mode of enhancement alongside a group-based parenting programme has not been formally evaluated to date. Previous reviews of enhancements identified one study that included a home visiting enhancement; however, this was in addition to a parenting programme that was delivered individually (Sanders et al., 2000). Other home visiting interventions recognise the benefits of this modality as it allows for tailored personalised support, an assessment of family systems, and identification of other risk factors affecting family functioning (Daro, 2006; Gomby, 2005; Sanders et al., 2000).

The review of the literature on enhancement programmes highlighted the need to develop an enhancement that was delivered by trained therapists to work collaboratively with parents to validate, empower and improve self-efficacy. Parents need to be the focus of the intervention, and barriers to change addressed (e.g., negative cognition, low motivation, transport, child care). The enhancement needed to build parent-child relationships, and have regular contact to rehearse and reinforce new parenting skills.

These factors influenced the development of HPS outlined in Chapter 3. This enhancement was designed to target the most vulnerable families and provide personalised support in the home while participants attended the group IYP programme. Combining both home visiting and group modalities allowed participants to benefit from the group experience and socialisation as the course content was delivered, and at the same time receive individual therapist support to implement strategies in their homes. Therapists were highly trained and, while working primarily from a Social Learning approach, they were able to use ideas from a number of other theoretical modalities, including attachment, motivation/empowerment, cognitive-attribution, and structural family systems (Scott & Dadds, 2009) to address barriers to change and to improve outcomes for the family. The main findings in terms of child behaviour will be discussed first, followed by other outcomes and then I will address limitations and recommendations.

Main Findings

Change in child behaviours

The primary hypothesis that HPS would improve scores on ECBI-P at post-treatment was not supported. Finding no benefit at post-treatment was unexpected but nonetheless not surprising, given that all participants in the trial received the IYP programme and everyone made significant improvement. The efficacy of IYP is well proven for benefiting child behaviours for most participants (Furlong et al., 2013; Hartman et al., 2002; Hutchings, Bywater, Daley, et al., 2007; K. Jones et al., 2008; Scott, Knapp, et al., 2001; Scott, Spender, et al., 2001; Webster-Stratton et al., 2011). All participants gained from the group experience, course content, and collaborative learning process of IYP and there was an improvement in mean scores at post-treatment irrespective of treatment group. Improvement in the immediate post-treatment scores could also be due to an immediate “feel good” factor attributable to attending a supportive group with parents in a similar position (Patterson et al., 2002).

The null finding at post-treatment could in part be explained by generous inclusion criteria that allowed participants to be included even if their ECBI-P score was not in the clinical range (see Chapter 4). This meant that there was less room for improvement on this scale for some participants.

It was not until six-month follow-up that the change in behaviour scores showed a significant benefit for those who had received HPS. This finding is important as it demonstrated that HPS participants had *ongoing improvement* at follow-up, compared with those who received

IYP alone. The additional benefit of HPS was not immediately evident at post-treatment as it may take time to embed change in behavioural patterns. The additional support may have helped to modify well-entrenched dysfunctional patterns of parent-child interactions and support effective strategies to become embedded into daily parenting practices, thus enabling change to continue well after the active intervention was completed. This delay in response has been reported previously by Patterson and colleagues (2002) who found the benefit in their intervention was not evident until six-month follow-up, suggesting that the intervention had an enduring effect on behaviour.

The follow-up result was encouraging as it suggested the addition of HPS may be associated with better child behaviour outcomes in the longer term. While it is not definitive that the benefit was directly related to the additional support in the home, it does give hope that this may be a clinically practical intervention to reduce conduct problems in young children. Any enhancement that improves longer term outcomes will benefit the child, the family and the wider community.

Change in clinical range

Having scores in the clinical range is a risk factor for adolescent engagement in delinquent acts (Larsson et al., 2009; Webster-Stratton et al., 2011). Therefore, finding that the change in percentage of participants in the clinical range at post-treatment, compared to baseline, was significantly better for HPS compared to IYP was an important finding. This demonstrates that those participants with more severe baseline behaviour on ECBI-P benefited at post-treatment and the benefit continued to be evident at follow-up.

Having more young children with behaviour scores in the non-clinical range must be a priority. Children with low levels of aggression have less risk of developing serious, violent behaviour in adolescence and young adulthood (Tremblay et al., 2004). Data in this study indicate that treating an additional five participants would result in one more participant moving out of the clinical range on ECBI-P at post-treatment. This represents a potential cost saving by reducing future crime and it immediately improves the quality of life for the individual, the family and the community. These findings provide support for the benefit of adding HPS to improve outcomes for vulnerable families. Given that the IYP is already being delivered widely in NZ, this additional intervention could be implemented with relative ease.

Ethnicity

In the NZ context, the benefit for Māori is an important finding in terms of our responsibilities under Te Tiriti and addressing the disproportionate number of Māori children

with conduct problems. Any treatment introduced in NZ must be equally effective for Māori whānau.

Results from this study showed that the response to HPS was no different between Māori and non-Māori, indicating that the treatment was equally effective across ethnic groups. Secondly, comparing results between treatment groups for Māori showed Māori who received HPS had better (but not significantly so) outcomes than Māori in IYP. It is important to note that the number of Māori families in this study was small and there may have been inadequate power to show any difference. Nonetheless, these results are encouraging, and further study to confirm these findings is warranted. Showing that Māori participants responded equally is consistent with previous studies in NZ on Incredible Years[®] programmes (Berryman et al., 2009; Dunn, 2012; Fergusson, Horwood, & Lesley, 2013; Stanley & Stanley, 2005; Sturrock et al., 2013; Sturrock et al., 2014) and contributes to the literature on beneficial programmes for Māori to address conduct disorder. The cultural acceptability of an IYP based programme was expected, given the international literature has consistently shown cultures in many countries respond equally (Beauchaine et al., 2005; Kaminski et al., 2008; Larsson et al., 2009; Webster-Stratton, 2009).

Mental health problems

Parents reporting mental health problems responded equally to treatment (in terms of child behaviour) as those who reported no mental health problems. The literature is mixed on the effect of mental health problems on response to parenting programmes. Some research shows that children of disadvantaged parents, including those with depression, have poorer intervention outcomes (Lundahl et al., 2006; Reyno & McGrath, 2006), while Beauchaine and colleagues (2005) found children of parents with high levels of depression did better than those children whose parents were less distressed. Gardner and colleagues (2010) found children of depressed parents did better with an intervention than with no intervention. Other studies have shown parenting programmes improved parental mental health (Barlow et al., 2002), and this improvement was important in order to sustain benefits of parenting interventions (Hutchings, Lane, & Kelly, 2004). The current findings show those with mental health problems responded equally to treatment and should not be excluded from participating in parenting programmes.

Retention

This study showed that retention was significantly higher for HPS participants compared with those receiving IYP alone. Attendance at parent training sessions has been found to be a

predictor of treatment outcome (Reyno & McGrath, 2006). Multiple-risk factors in vulnerable families affect engagement and attendance at parent programmes. A reduction in attendance means participants receive a smaller ‘dose’ with less information, fewer strategies and fewer opportunities for practice, which in turn affects change. The ‘dose’ effect is a known factor affecting outcomes (Baydar et al., 2003; Peacock et al., 2013). Receiving the full ‘dose’ means participants benefit from all the ‘building blocks’ of the content as it is presented over the course duration. Improving attendance has to be one aim of any enhancement, and ensuring that the frequency of home visits (or dose) is both acceptable and effective for families.

Missing sessions means parents have gaps in their knowledge and this affects understanding and makes it more difficult to implement new skills successfully. This may contribute to parents feeling discouraged and concluding that “it doesn’t work for my children” and these families are then at risk of disengaging. Some participants feel overwhelmed by their sense of failure and lack confidence to speak up in the group to ask for help. Any participant in HPS who missed an IYP session had the benefit of individual coaching from their HPS therapist to ‘fill the gap’ and rehearse new strategies to successfully implement them in their homes. This removed a barrier for returning to group sessions, as they were up-to-date with the content and had gained some level of confidence and mastery. Increased self-efficacy contributed to motivation to continue with the group.

While attendance was important to achieve change, it was not just attendance that made the difference in response between the two groups. The per-protocol analysis included all participants who had achieved high attendance rates and the result showed a significant benefit of HPS over IYP alone. This suggested that there may be other aspects of HPS that helped make this enhancement effective in addition to attendance. These are now discussed.

Benefits of HPS

The HPS enhancement was designed to address individual and systemic barriers to implementing effective parenting strategies. It is important to recognise that parent-child interactions and child outcomes occur as a function of the complex interplay between parent and child characteristics within the family system and their environment (Abidin, 1990; Shaw et al., 2003). For example, parental stress affects the ability to parent with consistency, and reduces capacity to take on new learning (Pianta & Egeland, 1990; Webster-Stratton, 1990b). Home visiting therapists have a unique opportunity to assess factors preventing change and to support family/whānau to address these. Home visiting interventions are flexible and can be

tailored to meet the specific needs of the family/whānau. While the focus of HPS was on implementing effective parenting strategies, therapists were also equipped to address barriers preventing this.

In the home coaching sessions, therapists reviewed the key principles and content from the Incredible Years[®] group programme and provided in-vivo coaching to support parents to effectively implement these with their children in the home. By having regular coaching and in-vivo practice of new skills, parents gained confidence, experienced positive change and were motivated to persist with these new strategies.

HPS focused on establishing positive parenting strategies and building a strong parent-child relationship. It has been found that focusing on positive parenting, rather than reduction in harsh and punitive practices, is a key factor in mediating change in child problem behaviour (Gardner et al., 2010). This positive parent-child interaction was mirrored by positive therapist-parent interactions where therapists modelled praise, affirmation and encouragement to parents as they tried new skills.

Participants commented that having regular home visits, feeling understood and receiving validation were positive experiences and helped build confidence to make change. They were less resistant to trying new strategies and had greater ability to model positive parent-child relationships in the home. Parents were supported to understand stages of child development and the key principles of behaviour modification, and this helped them establish realistic expectations and consequently to experience more success.

For those who received HPS, the additional personal coaching in the home meant parents set aside time to think and reflect on the patterns of their child's behaviour and interactions within the family/whānau. The conversations with the therapist may have helped change the language used to describe their child's behaviour and thus support parents to view behaviour as 'expressing a need' and not just being 'naughty'. Having regular coaching in the home helped parents to reflect and to develop a conscious awareness of how their own behaviour and other environmental factors affected their child's behaviour. Parents reported having more "understanding of children's emotions and temperament" and being more "conscious of my own behaviour" and the importance of being "a lot calmer". This awareness, along with an understanding of behavioural principles and Social Learning theory, helped parents to see that their children learn behaviours in the context of their environment and that they as parents are the most important role models for them. This awareness encouraged a change in attitude and a desire to be positive role models for their children, thus increasing positive

parent-child interactions and positive parenting practices. Parents became motivated to address their own negative cognition around parenting roles and responsibilities and take on the role of active parent. Many reported a greater appreciation of the importance of “building a positive parent-child relationship”. Others realised that they “needed to change first” and provide a positive and stable environment that promoted and reinforced security, predictability and positive behaviour. Parents receiving HPS commented that addressing other barriers (e.g., involving partner and overcoming shyness), along with receiving additional support for specific family/personal issues, helped them understand their child and this facilitated change in themselves and their family. They also valued having access to other specialist services e.g. psychiatry, paediatrics and psychology.

The home visiting therapists were also in a position to address other parent factors, including psychopathology, marital relationship, parenting style, and negative life events. While not all of these factors can be addressed quickly, when parents felt well supported and their level of distress was reduced, they had more capacity to take on new learning. This contributed to improved self-efficacy and more positive parent-child interactions.

HPS therapists also supported parents to address environmental factors affecting parenting including barriers to attend (transport and child care), lack of partner support, and extended whānau attitudes. Previous studies found that when the environmental factors contributing to the development of antisocial behaviours were addressed, long-term outcomes for children were improved (K. Jones et al., 2008; Webster-Stratton et al., 2011).

Therefore, the emphasis of any enhancement needs to address parental factors, child factors and environmental factors that affect capacity for change. Therapists must be skilled and be able to work in different therapeutic modalities, be flexible, and recognise which part of the family system needs to be addressed, how to do this, and when (Scott & Dadds, 2009).

The result at follow-up showed that improvement continued after treatment was completed. This suggests that HPS parents may have integrated new skills into their daily parenting practice and as a result, child behaviour continued to improve for at least six months.

Qualitative responses from participants identified many benefits in addition to improved child behaviour. These ranged from personal needs to wider family needs and life skills in general. It was poignant to hear the extent that parents of children with challenging behaviour felt blame, guilt, and despair. They experienced a sense of failure and felt stigmatised and isolated. They often lacked confidence to speak up in a big group and had low self-esteem. The growing sense of inadequacy about managing misbehaviour contributed to parents’ belief

that their child was the source of all problems within the wider family system. Some believed the child behaviour was deliberate and manipulative and they felt victimised by their children. Parents often had unrealistic expectations due to a belief that children should “*know how to behave*” and they did not understand that children needed to be coached and be shown (modelling) how to behave. Parent beliefs, along with their own experience of being parented, shaped their reactions and responses to their child and these were often punitive and coercive. Understanding how parents felt about their child gave insight into how they viewed their role as a parent and how they viewed the potential benefit of any intervention. Managing resistance is a skilled role for therapists. They need to work collaboratively with parents to challenge their beliefs and negative cognitions, provide hope for change and motivation to actively participate in the intervention for the benefit of the whole family system. This also requires the therapist to be familiar with all the principles of IYP to reinforce these appropriately using a variety of therapeutic modalities to meet the needs of each family’s unique set of circumstances.

Many parents appreciated having someone listen to their challenges and to be validated and affirmed as parents. Having their own needs met, and having some of the barriers to change addressed, contributed to their ability to make a shift in their cognition from assigning blame for their child’s behaviour, to understanding and managing it. Learning how to manage their own feelings, to stay calm, problem solve and model positive behaviour for their children was both empowering and encouraging for parents. As parents came to understand that children with conduct problems often needed different parenting skills, they appreciated the careful tailoring of strategies to meet the specific needs of their child, and the extra support to rehearse these in their home. They needed regular encouragement to persevere with new strategies because making change requires extra effort initially. Learning new skills, gaining confidence and having success all contributed to improved self-efficacy and this helped to improve relationships within the wider family system.

Over time, parents felt empowered by small changes, their ability to problem solve and resolve conflict, and being able to apply general behavioural, social and cognitive principles to other areas of life and to manage any relapses. This meant new skills were being generalised to their other children and to other settings or other aspects of their life including, for example, their work.

Parents receiving HPS found the additional support in the home reinforced new learning and contributed to long-term benefits, including being able to speak up and to ask for help. They

grew in competence and confidence, and had improved relationships in the home. They felt calm and had more self-control. HPS reinforced their understanding of child development, and appropriate developmental expectations. Parents' values and negative cognition were often challenged. Many of these skills and strategies are transferable to daily life. Participants received regular reinforcement and validation from the therapists as they tried new skills.

The cycle of change gained momentum; as parents' own needs were addressed. They had capacity to focus on building positive relationships and this meant child behaviour improved. Over time, parents were able to implement other effective strategies, and relationships within the family system became more functional as parents felt a greater sense of self-efficacy.

Adding home coaching while parents attended the Incredible Years® parent has not been evaluated before and appears favourable as an enhancement. There are few other enhancement interventions that have demonstrated a benefit. A review of the literature to identify effective enhancement programmes proved a challenge. Of the 12 enhancement programmes reviewed, none of these showed a significant benefit in terms of child problem behaviour at post-treatment. Only four studies had follow-up data and none of these showed significant benefit for child behaviour (David et al., 2014; Ireland et al., 2003; Salmon et al., 2014; Sanders et al., 2000). The most promising enhancement studies were those that addressed parental stress, mental health, and negative cognition (Chacko et al., 2009; Chronis et al., 2004; Durand et al., 2013) (see Chapter 2). HPS has included these beneficial aspects and incorporated them with practical in-home support to embed new parenting practices and this has encouraging results in the longer term.

Difference in ECBI scales

The two scales on ECBI showed different response to treatment. The Problem Scale appeared to be more sensitive to change and showed a larger effect than the Intensity Scale on some analyses. The effect of treatment for the total sample at follow-up was significant for ECBI-P and was not significant for ECBI-I. The same pattern was evident in the clinical range sub-analysis. However, for the ethnicity sub-analysis, the ECBI-I Scale did show Māori had a significantly better response than non-Māori at post-treatment. The per-protocol analysis also showed a significant difference on the ECBI-I Scale at follow-up between the two treatment groups.

The difference in response between the two scales is unusual and difficult to explain. Nevertheless, it is important to offer some suggestions. The Problem Scale is a measure of parental tolerance for their child's behaviour. The dichotomous yes/no scale on the ECBI-P

may have forced a choice and, with no middle point, parents may have opted for a more positive response on this scale. The Intensity Scale measures behaviours on a 7-point frequency of occurrence scale. Parents may have used this scale to indicate there was still incidence of some behaviour even though it was no longer regarded as a problem. As parents felt more competent, and with improved wellbeing and understanding of why behaviour occurred, they no longer saw all behaviour as a 'problem' because they now had knowledge to differentiate between normal developmental behaviour and problem behaviour. This could explain the improvement on the Intensity Scale over time for all participants, but the difference between the two treatment groups was not significant. Of course, another explanation is that the sample size was not large enough to detect significant differences on both scales. Power calculations showed a sample of 200 was needed to show a difference at post treatment.

With regard to the sub-analysis where two samples did show significant difference between the treatment groups on the intensity score, there are several considerations. Firstly, for Māori this may be a cultural response showing a difference in levels of tolerance of intense behaviour. Secondly, for those who met protocol criteria, this is another indication that when participants get the full treatment, the benefit is evident on all scales.

Effect of being part of trial

Generally, participants found answering the trial questionnaires and reflecting on change was helpful irrespective of which arm of the trial they were in. There were no negative effects of being in the trial and there were no adverse events reported.

Chapter 8: Conclusion

The motivation to carry out this study arose from seeing the increasing number of young children with challenging behaviour presenting in my clinical setting and seeing the distress that parents expressed about managing these behaviours. My clinical experience has taught me that the most severe families need more than group based parenting programmes. These children have a complex array of challenges; often have co-morbidities, dysfunctional family systems, disrupted early attachment and/or learning difficulties. The most vulnerable families have many risk factors that contribute to poor attendance in treatment and to poor outcomes. These include school dropout, substance abuse, teenage pregnancy and adolescent criminality (Tremblay et al., 2004). Addressing more than one part of the system surrounding the child is more likely to support long-term changes.

The growing incidence and intensity of conduct problems is disruptive and costly and is concerning governments across the world including New Zealand. Families with additional risk factors are the ones who are less likely to respond to parent management programmes. These are the children who are more likely to continue on a trajectory into adolescent dysfunction, criminality and substance abuse that is detrimental to the individual child, their families, and their communities. Ensuring that the most vulnerable families make change is a priority.

I have been delivering the Incredible Years[®] parent programme for 13 years and I have seen positive change for most families; however, it is those who do not make sufficient change who are of concern to me. The loss of opportunities for these individuals, the stress on the family system, the numerous resources required in schools, and the impact in the community is costly.

In New Zealand there have been considerable resources invested across the health, education and NGO sectors to establish the Incredible Years[®] parent and teacher programmes, and positive outcomes have been reported from both teacher and parent programmes (Fergusson et al., 2009; Sturrock et al., 2013; Sturrock et al., 2014; Wooller, 2015). With over 1,400 group leaders trained in IYP (Werry Centre, personal communication, March 2016), there is already an established infrastructure that can be built upon to improve results for the highest risk families.

This study has demonstrated that there is potentially a realistic and clinically practical intervention to support vulnerable families to maximise the benefits of IYP and make significant gains in reducing conduct problems in young children. Improved behaviour for a young person has benefits that span many domains: improved educational achievement, functional social networks, employment opportunities, and positive family relationships. The benefits for parents are improved life skills, social connections, and greater competence and confidence in their parenting. The benefits are also experienced in the community in terms of economic and social capital. These include a safer environment, functional families, and fewer resources required for education, health, social services and youth justice. The cost of not addressing these problems is too high to contemplate.

The management of conduct problems in children requires a collaborative approach from health, education, justice, and social services. The health sector in particular needs to be involved because conduct disorder is often associated with neuropsychological disorders (e.g., ADHD), it often has physical health consequences, and finally, mental health professionals have a key part in the assessment and treatment pathways (Scott, 2007). The question to ask is how well do the health services and child mental health services in New Zealand provide evidence-based treatments for conduct problems?

HPS intervention is in line with all five strategic themes of the revised NZ Health Strategy 2016 (Ministry of Health, 2016): i. Smart systems: HPS has a single referral point, clear pathways and defined protocol; ii. One team: HPS works collaboratively between sectors; iii. Value in high performance: HPS improves outcomes by enhancing existing programmes; iv. Closer to home: HPS is delivered in the home; v. People powered: HPS is designed to empower parent/whānau to make change.

If the longer term effects of the HPS intervention found in this study are replicated and then potentially scaled up across services in NZ, it is important that the Incredible Years[®] parent programmes are delivered as a preferred treatment for conduct disorder, and that HPS is added alongside this intervention for the more vulnerable families. There should also be a structure within each service to support and monitor the fidelity of these interventions. This is to ensure that service and practitioner drift does not erode the protocol and reduce the effectiveness for vulnerable families. While the addition of HPS may present some additional cost, there is already a strong infrastructure established to train, deliver and monitor IYP delivery across the sectors, such that an extension to include HPS is realistic and feasible.

Study Strengths

- This trial adds to the literature on effective enhancements.
- While the primary hypothesis was not supported, there were significant results at follow-up suggesting potential enduring benefit of HPS.
- This intervention was carried out in a community mainstream mental health service and is therefore realistic and practical to replicate.
- It is the first study to evaluate the benefits of adding a home visiting enhancement intervention alongside the Incredible Years[®] parent programme.
- This study included six-month follow-up data to assess longer term outcomes.
- The study adhered to high levels of integrity of research and fidelity of intervention.
- This study demonstrates the benefit of effective interagency collaboration and support and is consistent with the five strategic themes of the revised New Zealand Health Strategy.
- There were high levels of engagement in IYP and retention in the trial.
- There were no adverse events.
- The study included qualitative and quantitative analysis to include statistical and personal data on the intervention.
- The results provide information to inform power calculations for a larger evaluation that is both feasible and realistic.

Study Limitations

Participants were included in the trial if their child's behaviour score on just one measure was in the clinical range. This may have been a generous cut point and included participants who were not in the clinical range on the primary measure (ECBI-P). This meant these behaviours had less room to improve and may have reduced the post-treatment outcomes.

Measures of child behaviour were based on parent reports alone without independent measures. This is defensible as the measures are all reliable and well validated. Parents' perceptions of their child's behaviour are highly relevant, and there are studies that have shown adequate correlation between parent report and independent observation (Scott, Spender, et al., 2001). However, the addition of an independent, and ideally blinded, assessment of outcomes would add to confidence in the findings.

The cost to implement such an enhancement has not been formally analysed in this study. Previous studies on cost-benefit analysis, in many countries including NZ, have already shown efficacy in committing resources early in the life of a child with high rates of return on

investment. A more formal evaluation of the cost to implement HPS in NZ may address some of the potential barriers to implementation.

Effectiveness for Māori is important in the New Zealand context. In this study one third of participants identified as Māori and this represented a larger percentage than the national statistics of Māori as 15% of the total population. It was also greater than the national data on children under 15 years being 26% Māori (Statistics New Zealand, 2015), but was not large enough to carry out detailed ethnic analyses. This was not the main aim of this research, but it highlights the need for further investigation with a larger sample of Māori participants.

The number of secondary hypotheses meant there were multiple tests of significance and therefore the chances of a false positive were increased. This means the results need further validation.

Deviation from Published Protocol

It was stated in the published protocol that the percentage of participants with at least 80% engagement would be compared. This level was changed to 70% to be in line with the level set for the per-protocol level of attendance. Some studies have identified at least 10 hours of intervention as a therapeutic dose (i.e., at least five 2 hour sessions). For example, Bywater and colleagues (2009) reported 7 sessions (at least 14 hours) was a high mean attendance, and Webster-Stratton (1998) reported that at least 6 sessions (12 hours) were required. For this research, I set an attendance rate of 70% of sessions that equated to a minimum of 10 (2 hour) sessions (i.e., 20 hours of treatment). There was some variation (14–16 sessions) in the number of sessions delivered (depending on contract arrangements), therefore I set a percentage of sessions that meant the rate could be consistent. While the number of sessions varied between 10 and 11, the number of hours attended was a minimum of 20 hours, and therefore was above that set by other studies.

Power Calculations for Future Replication

This study was carried out to assess the feasibility of carrying out a large prospective randomised controlled study in a community setting and to collect data to inform the power calculations for such a study. The results of the current trial show that using last observation carried forward the observed change in pre- to six-month follow-up scores on the ECBI-P is 3.6. If a clinically relevant change is set at 3 points on the ECBI Problem Scale over six months, an overall total of 119 and 163 participants for 80% or 90% power respectively will

be required. For an observed difference of 4-point change on the ECBI-P at six months' follow-up, an overall total of 67 and 92 participants for 80% or 90% power respectively would be required. These calculations are also based on observed within group standard deviation of the change.

For pre- to post-treatment differences of 3 points on the ECBI Problem Scale, an overall total of 150 and 200 participants for 80% and 90% power respectively, will be required. For an observed difference of 4 points pre- to post-, an overall total of 85 and 115 participants for 80% and 90% power respectively, will be required (see Table 27).

These calculations represent a realistic sample size to replicate this trial, especially given that current study had a sample size of $N = 126$ and demonstrated an effect at follow-up, although may have been underpowered to show a difference immediately after intervention.

Table 27. Power calculations

Clinically relevant change	Sample size <i>N</i>			
	Pre-post		Pre-follow-up	
Points	80% power	90% power	80% power	90% power
3	150	200	119	163
4	85	115	67	92

Recommendations for Further Research

There are several areas that would benefit from further research.

- Replicate this trial with a larger sample as per power calculations above.
- The current study demonstrated effectiveness after six months. A further follow-up at one or two years post-treatment to evaluate longer term outcomes would allow an assessment of possible sustained benefits of HPS compared with IYP alone.
- This study did not analyse differences in response between groups based on sex or age (under five years and over five years) used for stratification. While the primary reason to use these stratification factors was to ensure randomisation was balanced, understanding any differences in response would also provide additional information on where to focus treatment.
- This study showed that neither ethnicity nor mental health affected outcomes, although it was underpowered to detect these. A larger study would allow a more robust assessment of these factors.

- A study of mediators and moderators of HPS would be worthwhile.
- There was no analysis of the efficacy of HPS for participants with other risk factors, such as solo parent, level of maternal education, and CYF involvement.
- A larger sample of Māori with more detailed analysis, and exploring the benefits of HPS for other ethnic groups in NZ would advance the literature.
- A cost-benefit analysis of adding HPS would be worthwhile.
- Further exploration of the number and spacing of HPS sessions that would achieve these outcomes may lead to increased efficiencies. However, if cost became the main driving factor, there is a risk that the number of sessions could be reduced below the critical number needed to achieve positive outcomes.

Summary

Problematic behaviour in children is an important public health issue and by necessity requires an integrated approach from all sectors in the community. Public policy is being influenced by research in this field and it is therefore important to know what works and what does not, in order to allocate financial resources wisely. There is little doubt that parent training in the early years of a child with conduct problems is the treatment of choice, using programmes that help parents to promote emotional regulation, develop social skills and reduce problem behaviours. Providing an enhancement that improves outcomes for the most vulnerable families is clinically important and is likely to result in short- and long-term benefits.

This thesis goes some way to filling a gap in the current literature. It showed the longer term benefit of adding an individual home visiting enhancement to the Incredible Years[®] group programme for the most vulnerable families who have risk factors for poor response to parent programmes. HPS was designed to address individual and systemic barriers to implementing effective parenting strategies. It provided support to understand behavioural principles, practise and establish positive strategies in the home and with whānau. In doing so, the therapists supported parents to address parental stress, mental health, negative cognition, emotional regulation and problem solving.

This trial failed to demonstrate any additional benefit of HPS over IYP in terms of child behaviour at post-treatment, however there were additional benefits identified at follow-up, and these warrant further investigation. While HPS is unlikely to be the sole factor accounting for this improvement, it may be a contributing factor. The opportunity to explore this

intervention further within New Zealand is timely. If an adequately powered replication trial confirms the promising findings in terms of longer term outcomes found in this trial then there is considerable potential to roll out this enhancement. There has been a considerable investment already into training and delivering IYP across the sectors in New Zealand and the opportunity exists to capitalise on this and to further evaluate the long-term benefits of adding HPS to the most vulnerable families to improve their outcomes.

Appendices

Appendix A: Search Strategy

conduct disorder, aggressive behavior/ oppositional defiant disorder/ impulse control disorders/ or explosive disorder/ behavior disorders/ behavior problems/ or tantrums/ impulsiveness/ attention deficit disorder with hyperactivity/ attention deficit disorder (conduct adj3 (difficult* or problem* or behavi* or disorder*)).ti,ab. ((antisocial or anti-social) adj3 behavi*).ti,ab. (oppositional adj3 (defian* or disorder* or behavi*).ti,ab. (disruptive adj3 (behavi* or disorder*).ti,ab. behavi* problem*.ti,ab. (external* adj3 (problem* or disorder*).ti,ab. (emotion* adj3 (behavio* or problem* or disturb*).ti,ab. conduct disorder/ or child behavior disorders/"Attention Deficit and Disruptive Behavior Disorders"/ (conduct adj3 (difficult* or problem* or behavi* or disorder*).ti,ab. ((antisocial or anti-social) adj3 behavi*).ti,ab. (oppositional adj3 (defian* or disorder* or behavi*).ti,ab. (disruptive adj3 (behavi* or disorder*).ti,ab aggressive behavi*.ti,ab. behavi* problem*.ti,ab. (explosive adj3 (disorder* or behavi*).ti,ab. (external* adj3 (problem* or disorder*).ti,ab. (emotion* adj3 (behavio* or problem* or disturb*).ti,ab. (tantrums or impulsive or implusiveness).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]

parenting/ ((parent* or family or families) adj2 (program* or interven* or train* or educat* or skills)).mp. ("incredible years" or "triple p" or pcit or "parent child interaction therapy" or "oregon social learning").mp. "Strategies to Enhance Positive Parenting".mp. Parents/ed [Education]] Parenting/((parent* or family or families) adj2 (program* or interven* or train* or educat* or skills)).mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures] ("incredible years" or "triple p" or pcit or "parent child interaction therapy" or "oregon social learning").mp. [mp=title, abstract, heading word, of contents, key concepts, original title, tests & measures]

Treatment dropouts/ at risk populations/ risk factors/(dropout* or drop-out* or dropped or retention or attrition).ti,ab. (risk or risks or atrisk or at-risk or highrisk or high-risk).ti,ab. (disengage* or dis-engage* or engage* or enhanc*).ti,ab. vulnerable.ti,ab. poor treatment outcome*.ti,ab (adher* or non-adher* or nonadher* or complian* or noncomplian* or non-complian*).ti,ab. treatment compliance/ Patient Dropouts/ (dropout* or drop-out* or dropped or retention or attrition).ti,ab. risk/ or risk factors/(risk or risks or atrisk or at-risk or highrisk

or high-risk).ti,ab. (disengage* or dis-engage* or engage* or enhanc*).ti,ab. Vulnerable Populations/ vulnerable.ti,ab. poor treatment outcome*.ti,ab. (adher* or non-adher* or nonadher* or complian* or noncomplian* or non-complian*).ti,ab. Patient Compliance/ "Strategies to Enhance Positive Parenting".mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]

clinical trials/(random* or trial*).mp randomized controlled trial.pt. controlled clinical trial.pt. randomized.ab. trial.ab. randomly.ab groups.ab. randomized controlled trials as topic/ or pragmatic clinical trials as topic/

Appendix B: Incredible Years® Specialist Service Guide



Incredible Years® Specialist Service

HPS Therapist Guide

AIM: This guide is to help HPS therapists to structure the home intervention to support parents/whānau in their implementation of strategies from the Incredible Years® parenting programme.

Incredible Years® Specialist Service:

Background information

The Ministry of Health Specification for the Incredible Years® Specialist Service was to provide a comprehensive interagency intervention to address conduct/antisocial behaviour and associated mental health problems in children.

Key features included:

- Strengthen and support interagency response
- Bring mental health expertise and capacity to a multi-agency team
- Strengthening interventions for Māori
- Primary focus on children 3–7 years and those with most severe conduct problems.

Background to Incredible Years® Specialist Service in Tauranga

Since 2009 Ministry of Health (MOH) and Ministry of Education (MOE) in Tauranga have worked in collaboration to establish the Incredible Years® Specialist Service (IYSS). The aim is to provide extra support for those attending the Incredible Years® Parent (IYP) course with children aged 3–7 years where there are additional risk factors for the children developing chronic conduct problem behaviours.

Role of IYSS:

To deliver an HPS intervention to support families/whānau to implement IYP strategies while they attend the IYP group programme. It also provides information and support to access other health, education and community services where necessary e.g., adult mental health, income support, relationship services, and MOE services.

Participants:

Parent/ whānau

Enrolled in an IY programme with MOE or MOH

Children 3–7 years (under 8 years)

Child scores on pre-course measures are in clinical range or there is CYFS involvement, parental mental health, or child is stood down from school.

Expectation of Service:

IYP group leader meets with HPS therapist prior to start of IYP to identify families who meet criteria for HPS.

IYP group leader contacts families to offer HPS.

HPS therapist makes contact with families before week 3 of IYP course

HPS is designed to:

- Support families to implement IYP parenting strategies in the home
- Review understanding of IYP principles
- Support parents to personalise strategies for their child
- Set realistic goals for implementing IY strategies
- Identify and address barriers to implementation
- Make appropriate referrals to community agencies
- Provide 10 in-home sessions with follow-up at one month.

The role of the HPS therapist:

- To visit parent/whānau in their home (or at ICAMHS if they prefer)
- Take time to build a trust relationship. Whakawhānaungatanga is the process of establishing relationships and relating well to others
- To support them to implement strategies learnt from IYP group
- Model a collaborative empathetic supportive learning process
- Validate and encourage parents to encourage and support change
- Identify and support parents to address any barriers to the implementation of new strategies e.g., domestic violence, substances abuse, and parental mental health. This may mean referral and follow-up with other agencies
- Be a positive role model and provide praise and encouragement as they try new strategies
- Provide opportunities to practise new skills, develop awareness of developmental stages, have realistic expectations, and to reflect on their beliefs and cognitions
- Help them to reflect on their parenting style and to 'stand in their child's shoes' i.e., to see things from the child's view
- Focus sessions on reviewing the content that has already been covered in the group course.

- Use vignettes from the IYP programme to review key concepts if required
- Support goal setting
 - Small achievable and realistic goals
 - Review them each time and refine if required or set a new one.

Some questions to ask at the home visit:

- How are you getting on with your goal for the week? Reflect on success and challenges
- What was most helpful principle from the last IYP group content? (e.g., specific labelled praise)
- What did you notice when you tried this?
- What worked/ what didn't work?
- Can you show me how you do this? What words do you say?
- Practise this skill again if appropriate

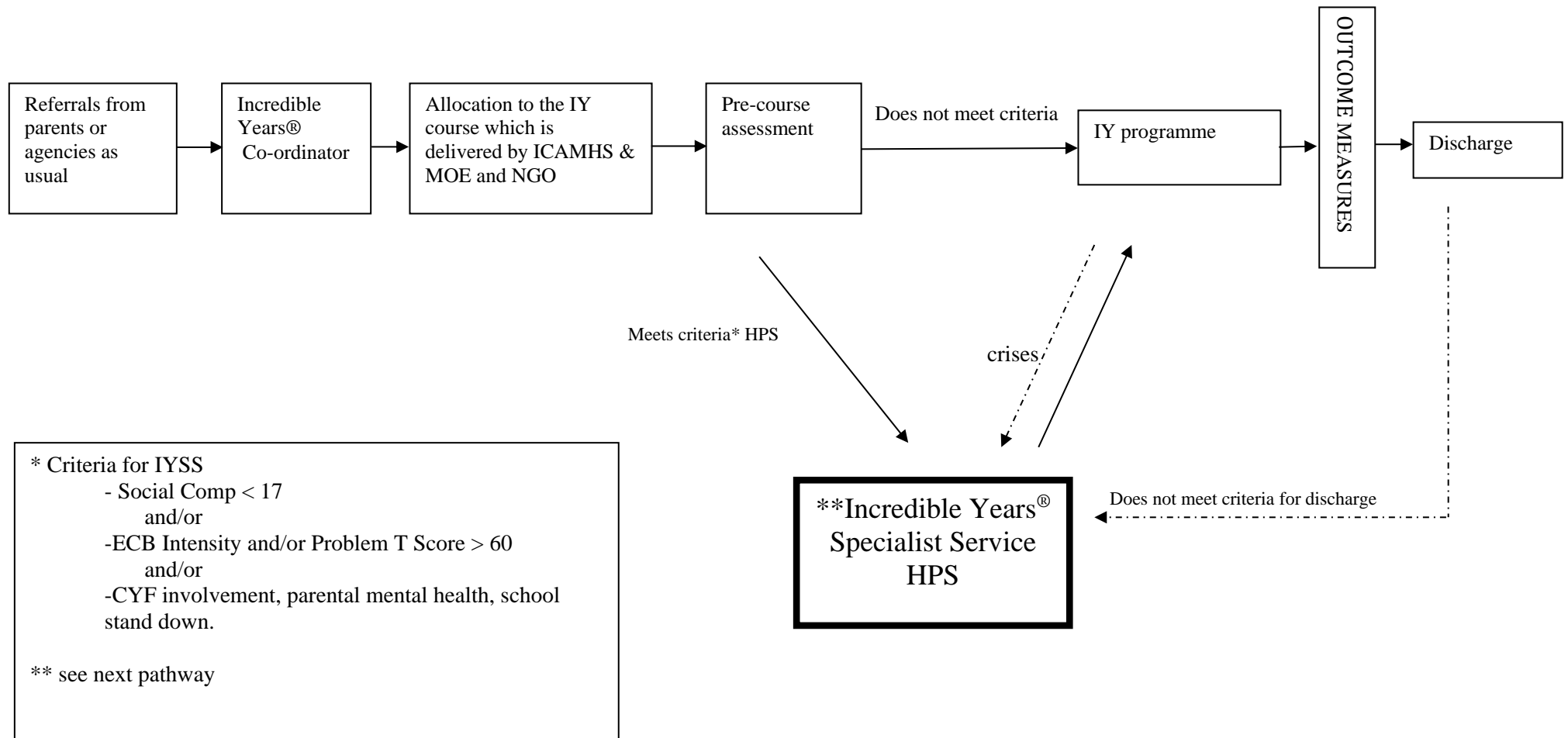
Use vignettes to review strategies they are finding difficult:

- Select 1–2 vignettes and explore in more depth using the key concepts
- Set up practices to experience this new skill
- Debrief the practice: – How did it feel to
 - What did you notice was different?
 - When could you use this skill?
 - What do you think might happen when you do?
 - How will you respond?
 - What is a goal you can work on for next time?

HPS Intervention Integrity

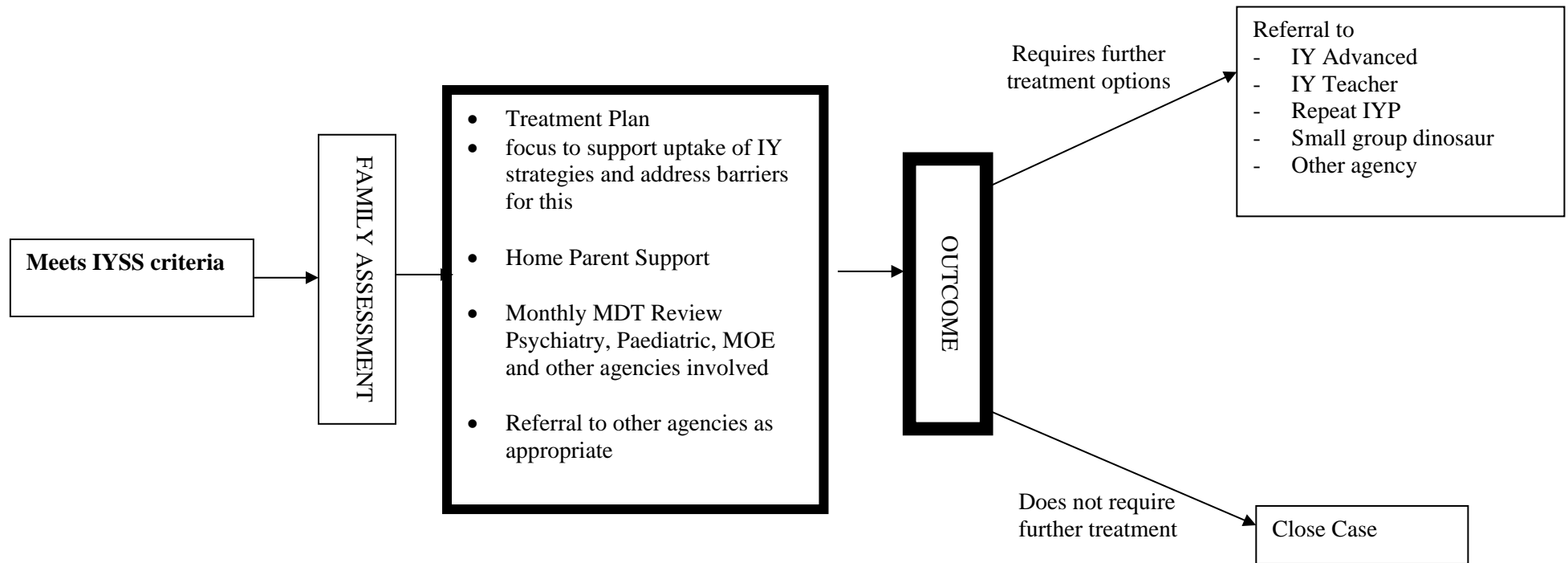
- Therapist to attend 3 days training in IYP facilitation and work towards accreditation
- Therapist to follow HPS session guide and mark components as appropriate
- Therapist to attend 2 weekly supervisions to review cases and intervention efficacy
- Therapist to attend MDT monthly and review every case.

Pathway I: Incredible Years® and IYSS Pathway
 MOE/SE and CAMHS



Pathway II: Incredible Years® and IYSS Pathway

MOE and CAMHS



Incredible Years® Specialist Service:

INCREDIBLE YEARS
SPECIALIST SERVICE

*IYSS ATTEMPTS TO
PROVIDE WRAP AROUND
SUPPORT TO MEET YOUR
FAMILY / WHANAU NEEDS.*

**WHAT IS EXPECTED OF ME
IF I AM INVOLVED IN IYSS?**

A COMMITMENT TO WORKING ON
THE PROBLEMS YOU ARE FACING
BY:

- Attending the Incredible Years Programme
- Working with the team to implement positive changes in the home
- Attending specialist appointments if necessary.



Comments from families/whanau

“I really appreciated the regular support in the home”

“Going over the material helped me understand how to do things differently”

“Having the whole family on board made a big difference”

Contact us on

Phone: 07 579 8380



INCREDIBLE
YEARS SPECIALIST
SERVICE (IYSS)

**Offering extra support to
the Incredible Years
Programme.**

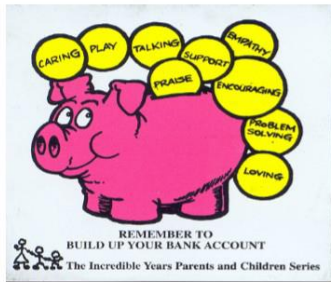


© 2011 The Incredible Years, Inc. All rights reserved. "THE INCREDIBLE YEARS" and all related trademarks are owned by The Incredible Years, Inc. USA. Limited use of trademarks and copyrighted material is by license from The Incredible Years, Inc. All program materials must be ordered through www.incredibleyears.com





IYSS gives added support to families who are in the Incredible Years Programmes. Parents attending Incredible Years will complete a form and this will help us to know whether the IYSS will be helpful to you and your family / whanau.



The IYSS is run by Child and Adolescent Mental Health and the Ministry of Education. This means that people from health and education work in partnership with you to help your child with their health, behaviour and learning.

The IYSS will meet with you and your family/ whanau and make a plan which will involve:

- Extra guidance, coaching and assistance to help parents introduce the IYs skills into your own home
- Home visits and phone calls to offer further support
- Extra coaching or catch up sessions

The IYSS also provides the family with direct access to

- Psychological support
- Psychiatric assessment
- Paediatric assessment

The IY team may also identify other agencies that may be appropriate. These can include and are not limited to:

- Child and Adolescent Mental Health
- Adult Mental Health
- Ministry of Education
 - RTL
 - Teacher aide
 - Speech and Language Therapy

Who is the IYSS Team?

The team consists of two psychologists, a family therapist, a psychiatrist and a paediatrician.

- Dianne Lees – Clinical Psychologist CAMHS
- —Registered Social Worker CAMHS
- — Consultant Child Psychiatrist CAMHS
- — Paediatrician Tauranga Hospital

It also involves Ministry of Education staff

- - MOE IY coordinator



Incredible Years® Specialist Service:



Incredible Years® Specialist Service

Consent Form

- I agree to have support from HPS facilitators to implement Incredible Years® strategies in the home and for them to communicate with my Incredible Years® Group Leaders.
- I agree for a file to be opened in CAMHS and for the treatment plan to include appropriate multi-disciplinary support.
- I agree for HPS facilitators to access my child's DHB records where appropriate.
- I agree for my HPS facilitator to liaise with the following other agencies about my child:

Agency:

Contact person:

.....
.....
.....
.....
.....

.....
.....
.....
.....
.....

Childs name _____ DOB _____

Parent/caregiver name _____

Parent/caregiver signature _____

Date _____

Appendix C: Incredible Years® Specialist Service Assessment

Incredible Years® Specialist Service Assessment			
Child's Name:			
Age & DOB:			
Address:		Contact No:	
Ethnicity: Child		Parent/Caregiver:	
IY group attending (if applicable)			
Assessors Names:		Time:	Date:

Present at Interview: *(Client/Parent/Legal Guardian/Others):*

--

Genogram/ Whakapapa:

--

Strengths of family (supports, groups, church, hobbies, spirituality, cultural supports...)

--

Referred Child's strengths (according to parents):

Problems Identified: (behaviour, frequency, duration, intensity etc.)

What doesn't help: (triggers, antecedents, patterns etc.)

What helps:

Previous supports: (strategies, agencies etc.)

Other agencies: (currently involved)

--

Child's developmental history:

Pregnancy:	
Delivery:	
Attachment:	
Milestones/General development:	
Feeding/speech development:	
Relevant Medical History:	
Significant life events:	
Drug/Alcohol exposure: Nil	

Education:

Childcare/Kindergarten:	
School:	

Hobbies/Interests/Friends etc.:

--

Childs perspective on issues:

--

Any further (relevant) information:

Risk Factors:

General Observations:

Goals:

Plan:

Appendix D: HPS Therapist Guide Session Checklist

HPS Therapist Guide

Family Name: _____

Attending IY Course delivered by: _____

Date of first IY session _____ Date of first HPS visit _____

Session one

Within 3 weeks of start of IY program

Whakawhānaungatanga (getting to know each other)

Clarify expectation and role of HPS

Consent

Family Assessment (including risk)

Goal Setting

Make next appointment

Comments

Yes	No

HPS Therapist Guide

Final Session _____(date)

Review goal

Review relapse plan

Review Risk

Identify support people

Set new goal

Make follow up appointment/contact (~1 month)

Phone call since last session

Comments

Yes	No

HPS Therapist Guide

One Month Follow-up _____(date)

Review goal

Review relapse plan and access to support

Review risk

Set new goal

Reflect on change and predict success

Discharge letter

Close file and complete DHB requirements

Comments

Yes	No

Appendix F: Informed Consent

Incredible Years Specialist Service Consent Form

1. I have read and I understand the information sheet dated _____ for volunteers taking part in the study designed to *evaluate the benefit of adding IYSS to help parents/whanau implement Incredible Years Parenting strategies*. I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.
2. I have had the opportunity to use whānau support or a friend to help me ask questions and understand the study.
3. I understand that taking part in this study is voluntary and that I may withdraw from the study at any time, and this will in no way affect my access to Incredible Years Programmes or any future health care.
4. I understand that my participation in this study is confidential and that no material that could identify me will be used in any reports on this study.
5. I have had time to consider whether to take part in the study.
7. I know whom to contact if I have any questions about the study in general.
8. I would like to receive a summary of the results Yes No
9. I _____ hereby consent to take part in this study.
(full name)

Date:	<input type="text"/>
Participant Signature:	<input type="text"/>
Participant email:	<input type="text"/>
Full name of researcher	<input type="text" value="Dianne Lees"/>
Contact phone number for researcher	<input type="text" value="579- 8894 or 021 2285619"/>
Project explained by:	<input type="text"/>
Project role:	<input type="text" value="Research assisstant"/>
Signature:	<input type="text"/>

* Version 3: Dec 10th 2012

Appendix G: Additional Contacts

Additional contacts for: (participant name)

If my contact details change and you can not contact me for further interviews you can contact the following people who will know where I am.

These people agree to be a contact person for me.

Name:

Relationship

Contact phone numbers:

Email:

Address:

Name:

Relationship

Contact phone numbers:

Email:

Address:

Name:

Relationship

Contact phone numbers:

Email:

Appendix H: Additional Māori Cultural Support

Address:

Additional Māori cultural support is available from:

1. The Bay of Plenty DHB Whānau advisor is available to support whānau.
2. Other Māori cultural support is available from:
 - Te Puna Hauora,
 - Nga Mataapuna Oranga
 - Te Runanaga O Ngai Te Rangi
 - Te Poutiri Trust

Please indicate to the research assistant if you would like to be connected with any cultural support services.

I would like to be access Māori cultural support.

Name:.....

Appendix I: Research Assistant Information Sheet

Dear research assistants,

Please read the following information before you visit participants. Please don't hesitate to contact me at any time.

When making first contact probably by phone:

- *Introduce yourself. Establish that you are talking to the correct person.*
- *Explain you are a research assistant for the Incredible Years® Specialist Service. Their IY group leader would have told them about the research and they had agreed to be contacted.*
- *Establish a time to meet to explain the research and to go through the questionnaire (allow at least 45 mins). Check where to go, who will be there. **You could meet in a café if circumstances make it better for participant e.g., privacy or safety.***
- *Remind them they will receive a \$30 supermarket voucher for their time and that you will bring it with you. Check if there are dogs at the property and what to do if there are.*
- *If you have any concerns about participant's safety at any time, contact me and I will follow-up. If you feel unsafe at any time do not continue with the interview and leave as soon as you can.*

First meeting

- *Phone before if possible. Greet them by name and introduce yourself. Wear your identification name badge.*
- *Thank them for agreeing to hear more about the research trial and that you will explain what is involved and then complete the questionnaire if they agree.*
- *Check the focus child is **over 3 and under 8 years and in their care or they have regular access.***

Go through the parent information sheet and ensure they understand:

- *That HPS is an extra in-home support while they attend IYP.*
- *That everyone attends the Incredible Years® Parent programme as usual. All those in the trial have the chance to be randomly allocated to receive HPS at the same time as attending IYP.*
- *If they are allocated to HPS they will be contacted by an HPS facilitator and arrange a suitable time to begin HPS.*
- *If they are not allocated to HPS they will attend the IYP group and get all the benefits of the learning, group support, and parenting skills.*
- *Everyone in the trial will be interviewed 3 times and receive the vouchers for their time.*
- *Agreeing to participant in the trial **DOES NOT MEAN YOU GET HPS.***
- *That they can withdraw at any time.*

If they agree to continue then ensure

- *they sign the consent form and date it.*
- *you have contact details for people who will know where they are if they move. Get their email address if possible.*
- *let them know there is cultural support available if they want. Fill out request for cultural support and return to me.*
- *Each participant will have a coded number allocated (see participant list). Please enter this number onto the booklet with a blue cover once they have signed consent.*

*Go through the questionnaire (**BLUE BOOKLET**) reading out the questions. Use **RED** pen.*

- *It is OK to get them to read silently 'sensitive questions' about violence if you are confident they are able to read and understand. Read the questions as they are written and only clarify understanding if they ask. It is OK to swap the order of questions on depression P 1-7.*
- *Acknowledge that some questions are similar- be sure to clarify who the questions are addressing i.e., N25-N48 is about partner.*
- *Thank them for participating and give them the voucher. Please get them to sign conforming receipt of voucher. Remind them you will be contacting them again at the end of the IYP group to do a follow-up questionnaire and they will get another voucher.*
- *When you are home go through the booklet and make sure all questions are answered. If not phone the participants and complete. Complete the Interviewer only section at the end of the booklet. Return consent forms and completed questionnaires to me,*

Post-treatment Interview Green Booklet

- *Make phone call and remind them who you are and why you are calling.*
- *Arrange a time to meet.*
- *Enter the code number of the participant onto a Green booklet.*
- *Remind yourself of the 'target' child's name and use it in the questions.*
- *Complete the questionnaire and give them a \$30 voucher.*
- *Remind them you will be asking them for one more interview in 6 months and this time they receive a \$40 voucher.*

Follow-up Interview Yellow Booklet

- *Use the Yellow interview booklet.*
- *Thank them for their participation.*
- *Give them a \$40 voucher.*
- *Let them know they can receive a summary of the results if they wish.*
- *Please ask them how they would like to receive this information i.e., email or post and record email and/or address in your logbook.*

Many thanks

Dianne

Appendix J: Incredible Years® Group Leaders Research Information

Incredible Years® Group Leader Information on Research:

When you visit your participants please collect pre course data **before** you tell them about the research trial.

Complete the Social Competency Scale, and the Eyberg Child Behavior Inventory

After collecting these measures tell them about the research

Information on research:

I want to tell you about some research that you have the chance to be part of. Some families have benefited from having extra support in the home from a specialist worker while they are attending IYP. This helps them to implement the strategies they are learning in the group and to make positive changes for the whole family/whānau.

We want to evaluate how effective this extra support is and you have the chance to be part of this research. Please note that the scores on the questionnaire indicate which families are eligible to be part of the research and you then have the chance of getting the extra home support. All families who are in the research will be interviewed 3 times and get a supermarket voucher each time. (\$30 +\$30+\$40 = total of \$100).

If you are interested to hear more about this please fill out the consent to contact form. If you are eligible a research assistant will contact you

Sign and date **the Consent to Contact** form and bring it with you.

Please leave the sheet of information for them to read again.

At the end of the course I need post course Eyberg and Social Competence scores and attendance.

Researcher: Dianne Lees; work 579-8894, mobile [REDACTED], home [REDACTED]

Appendix K: Participant Research Information

Incredible Years Specialist Service Research Information

Dear Incredible Years parent/whānau,

You have enrolled to attend the Incredible Years Parent programme and I am inviting you to be part of a research project to see if adding the Incredible Years Specialist Service while you attend the Incredible Years Parent programme helps you implement strategies from the programme. This research is part of my requirements to complete a PhD qualification through Auckland University.

What is the Incredible Years Specialist Service?

This is an extra in home support service for families whose children's scores on questionnaires and other family/whānau factors indicate that extra support might be helpful. It is provided by an experienced family therapist, social worker or psychologist and they are all accredited Incredible Years facilitators. One of them will visit you in your home to help personalise parenting strategies for your family/whānau, and help address any barriers you identify and want help with. There are up to 10 visits of about 50 minutes. The timing and number of the visit is flexible to suit your needs.

What happens if I agree to be part of this research?

You will attend the Incredible Years Parent programme as usual and you have the chance to be randomly allocated to receive the extra in home support. The allocation to IYSS will be decided by random allocation in a process that is designed for research. Everyone who meets the criteria for IYSS and agrees to be in the research will be interviewed at home three times (at the beginning and end of the Incredible Years programme, and at 6 month follow up). The interview takes 30-40 minutes and involves you answering questions read out to you. All information is confidential and no material that could identify you will be used in any reports on this study.

What are the benefits for me?

If you meet the criteria for IYSS you have the chance to receive support in home while you attend the Incredible Years Parent programme. Each participant in the trial will receive a grocery voucher to compensate for your time completing the interview questions. \$30 voucher for the first two interviews, and \$40 voucher for the follow-up interview. A total of \$100 in grocery vouchers.

What if I don't want to be in the research?

This is fine. You can still attend the Incredible Years Parent programme and receive all the usual benefits from the group experience, support and learning.

What if I agree to be part of the research and then decide I don't want to?

You can withdraw from the trial at any time and still be able to attend the Incredible Years Parent Programme.

Would you like to be contacted by the research assistant to hear more information?

If so please sign the contact form with your contact details.

You will be contacted by a research assistant who will discuss the research with you and your whānau. You are invited to have family/whānau present when the research is explained to you.

**Researcher Dianne Lees
Ph 5798894; 0212285619**

* Version 3: Dec 10th 2012

*

Appendix L: Participant Feedback

Incredible Years Specialist Service Research Information

July 2016

Dear families

Thank you for participating in the research to evaluate the benefits of adding Home Parent Support (HPS) alongside the Incredible Years® programme (IYP). I'm writing to share the results with you and thank you for your contribution.

You will remember that everybody attended IYP and half of you were allocated to receive additional support in the home. Results showed that overall everybody had much better child behaviour scores at the end of the IYP course. This was not surprising because we already know the Incredible Years® programme is very effective. It was not until 6 months after the course finished that the benefit of HPS was evident. These families showed further improvement compared to families who had IYP alone.

It was encouraging to see that Māori families responded equally well to IYP and HPS. Other results showed that families who had HPS had higher attendance at IYP and more HPS families completed the course. All families irrespective of the group they were in were highly satisfied with the IYP programme. Some parents commented that they now *"know the importance of spending quality time with my kids"* and they found *"the tools for dealing with misbehaviour were very effective"*. Other comments were about having a *"the stronger relationship bond that resulted in more compliance and less need for discipline"*.

Comments from some families who received HPS highlighted the benefit of the therapist visiting in the home as *"it felt like someone was actually taking an interest and helping us out on a more personal level"*. For others it was the dedicated one-on-one time *"to focus on specific issues"*. Another parent reflected that *"we have learnt self-control, there is less yelling, screaming and slamming doors, no more swearing and I am a lot calmer"*

These results help us understand how we can support families who have children with challenging behaviour. They show that providing extra support for families while they attend the Incredible Years® Programme will help improve outcomes.

I want to express my gratitude to all families who agreed to be part of the research, for completing all the questionnaires and for sharing your personal stories. Without your willingness, this research could not have been carried out.

Many thanks

Dianne Lees

Dianne.lees@bopdhb.govt.nz

S.15 **Do you have any other comments?**

Record narrative. No conversation = 12, Refused = 99.

Appendix N: Follow-up Interview Questionnaire

Incredible Years® Specialist Service follow-up questionnaire

Date

This questionnaire will help guide how we support families attending the Incredible Years® Programme (IYP). Your response is important and we welcome your feedback. All responses are confidential and anonymous.

1. Did you complete IYP group course? Yes No

2. How many sessions did you attend? (Please circle one)

1-4	5-8	9-12	13-16	16+
-----	-----	------	-------	-----

3. What changes have you noticed in your child's behaviour since starting IYP?

4. What have you noticed about your relationship with your child since starting IYP?

5. How confident do you feel to implement the IY strategies in your home? (Please circle one)

Not confident	a little	neutral	somewhat	very
confident				

6. How helpful was it to be part of the research trial? (Please circle one)

Unhelpful	somewhat unhelpful	neutral	helpful	very helpful
-----------	--------------------	---------	---------	--------------

7. Please comment on helpfulness/unhelpfulness of being part of research trial.

8. Did you receive the Incredible Years® Specialist Service? - Yes No (go to Q12)

9. If Yes how helpful was it? (Please circle one)

Unhelpful	somewhat unhelpful	neutral	helpful	very helpful
-----------	--------------------	---------	---------	--------------

10. What was most helpful?

11. How can IYSS be improved?

12. Other comments

Thank you for completing this questionnaire

** Version 2: Dec 10th 2012*

Appendix O: Post-treatment Satisfaction Questionnaire

Participant Code _____

Incredible Years Parent Program Satisfaction Questionnaire Basic Parent Program

(Hand out at end of the program)

Participant's Name _____ Date _____

The following questionnaire is part of our evaluation of the Incredible Years parenting program that you have received. It is important that you answer as honestly as possible. The information obtained will help us to evaluate and continually improve the program we offer. Your cooperation is greatly appreciated. All responses will be strictly confidential.

The Overall Program

Please circle the response that best expresses how you honestly feel at this point.

1. The bonding/attachment that I feel with my child since I took this program is

considerably worse slightly worse the same slightly improved improved greatly improved
worse

2. My child's behavior problems which I/we have tried to change using the methods presented in this program are

considerably worse slightly worse the same slightly improved improved greatly improved
worse

3. My feelings about my child's social, emotional and academic developmental progresses are that I am:

very dissatisfied slightly dissatisfied neutral slightly satisfied satisfied greatly satisfied
dissatisfied

4. Use of practice/role play during group sessions was

extremely useless useless slightly useless neutral somewhat useful useful extremely useful
useless

5. My expectation for good results from the Incredible Years program is

very pessimistic slightly pessimistic neutral slightly optimistic optimistic very optimistic
pessimistic

6. I feel that the approach used to enhance my child's social behavior in this program is

very inappropriate inappropriate slightly inappropriate neutral slightly appropriate appropriate greatly appropriate
inappropriate

7. Would you recommend the program to a friend or relative?

Strongly not recommend not recommend slightly not recommend neutral slightly recommend recommend strongly recommend

8. How confident are you in parenting at this time?

Very unconfident unconfident slightly unconfident neutral slightly confident confident very confident

9. How confident are you in your ability to manage *future* behavior problems in the home using what you learned from this program?

Very unconfident unconfident slightly unconfident neutral slightly confident confident very confident

10. My overall feeling about achieving my goal in this program for my child and family is

very negative negative slightly negative neutral slightly positive positive very positive

11. Comments:

Thank you for completing this questionnaire

References

- Abidin, R. R. (1990). Introduction to the special issue: The stresses of parenting. *Journal of Clinical Child Psychology, 19*(4), 298–301. doi:10.1207/s15374424jccp1904_1
- Adair, J. G. (1984). The Hawthorne effect: A reconsideration of the methodological artifact. *Journal of Applied Psychology, 69*(2), 334–345. doi:10.1037/0021-9010.69.2.334
- Akobeng, A. (2005). Principles of evidence based medicine. *Archives of Disease in Childhood, 90*, 837–840. doi:10.1136/adc.2005.071761
- Altena, I., & Herewini, T. (2009). *Incredible Years marae based group evaluation: Manawanui marae based evaluation*. Retrieved from [http://www.werrycentre.org.nz/site_resources/library/Projects/Parent_Mgt_Trng_Incredible_Years/Articles and Reports/IY Whanau Group Evaluation Report 2009](http://www.werrycentre.org.nz/site_resources/library/Projects/Parent_Mgt_Trng_Incredible_Years/Articles_and_Reports/IY_Whanau_Group_Evaluation_Report_2009)
- Anstiss, T. (2013). An overview of Incredible Years in New Zealand. Retrieved from http://www.werrycentre.org.nz/506/An_overview_of_Incredible_Years_in_NZ
- Avellar, S., Paulsell, D., Sama-Miller, E., & Del Grosso, P. (2012). *Home visiting evidence of effectiveness review: Executive summary*. Retrieved from http://homvee.acf.hhs.gov/HomVEE_Executive_Summary_2012.pdf
- Bagner, D., & Graziano, P. (2012). Barriers to success in parent training young children with developmental delay: The role of cumulative risk. *Behavior Modification, 37*(3), 356–377. doi:10.1177/0145445512465307
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, N.J.: Prentice Hall.
- Bandura, A., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology, 45*(5), 1017–1028. doi:10.1037/0022-3514.45.5.1017
- Barlow, J., Coren, E., & Stewart-Brown, S. (2002). Meta-analysis of the effectiveness of parenting programmes in improving maternal psychosocial health. *The British Journal of General Practice, 52*(476), 223–233.
- Baydar, N., Reid, J., & Webster-Stratton, C. (2003). The role of mental health factors and program engagement in the effectiveness of a preventive parenting program for Head Start mothers. *Child Development, 74*(5), 1433–1453.
- Beauchaine, T., Webster-Stratton, C., & Reid, M. (2005). Mediators, moderators, and predictors of one-year outcomes among children treated for early-onset conduct problems: A latent growth curve analysis. *Journal of Consulting and Clinical Psychology, 73*(3), 371–388.
- Berryman, M., Woller, P., & Glyn, T. (2009). *The Incredible Years: Learning from the experience of Māori whanau and Māori staff in special education: Evaluation report*

prepared for the Ministry of Education, Special Education. Tauranga, New Zealand: Poutama Pounamu.

- Blissett, W., Church, J., Fergusson, D., Lambie, I., Langley, J., Liberty, K., . . . Werry, J. (2009). *Conduct problems: Best practice report 2009*. Wellington, New Zealand: Ministry of Social Development.
- Boden, J., Fergusson, D., & Horwood, L. (2010). Risk factors for conduct disorder and oppositional/defiant disorder: Evidence from a New Zealand birth cohort. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(11), 1125–1133.
- Bonin, E.-M., Stevens, M., Beecham, J., Byford, S., & Parsonage, M. (2011). Costs and longer-term savings of parenting programmes for the prevention of persistent conduct disorder: A modelling study. *BioMed Central Public Health*, 11(1), 803. doi:10.1186/1471-2458-11-803
- Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2008). *Introduction to meta-analysis*. Chichester, UK: John Wiley & Sons.
- Bunting, L. (2004). Parenting programmes: The best available evidence. *Child Care in Practice*, 10(4), 327–343. doi:10.1080/1357527042000285510
- Bywater, T., Hutchings, J., Daley, D., Whitaker, C., Yeo, S. T., Jones, K., . . . Edwards, R. T. (2009). Long-term effectiveness of a parenting intervention for children at risk of developing conduct disorder. *British Journal of Psychiatry*, 195(4), 318–324. doi:10.1192/bjp.bp.108.056531
- Bywater, T., Hutchings, J., Linck, P., Whitaker, C., Daley, D., Yeo, S., & Tudor Edwards, R. (2011). Incredible Years parent training support for foster carers in Wales: A multi-centre feasibility study. *Child: Care, Health and Development*, 37(2), 233–243. doi:10.1111/j.1365-2214.2010.01155.x
- Chacko, A., Wymbs, B., Wymbs, F., Pelham, W., Swanger-Gagne, M., Girio, E., . . . O'Connor, B. (2009). Enhancing traditional behavioral parent training for single mothers of children with ADHD. *Journal of Clinical Child & Adolescent Psychology*, 38(2), 206–218. doi:10.1080/15374410802698388
- Charles, J., Bywater, T., & Edwards, R. (2011). Parenting interventions: A systematic review of the economic evidence. *Child: Care, Health and Development*, 37(4), 462–474. doi:10.1111/j.1365-2214.2011.01217.x
- Chronis, A., Chacko, A., Fabiano, G., Wymbs, B., & Pelham, W. (2004). Enhancements to the behavioral parent training paradigm for families of children with ADHD: Review and future directions. *Clinical Child & Family Psychology Review*, 7(1), 1–27.
- Chronis, A., Gamble, S., Roberts, J., & Pelham Jr, W. (2006). Cognitive-behavioral depression treatment for mothers of children with Attention-Deficit/Hyperactivity Disorder. *Behavior Therapy*, 37(2), 143–158. doi:10.1016/j.beth.2005.08.001
- Church, J. (2003). *The definition, diagnosis and treatment of children and youth with severe behaviour difficulties*. Retrieved from https://www.educationcounts.govt.nz/publications/special_education/15171

- Church, J., Fergusson, D., Langley, J., Liberty, K., Poulton, R., Ronan, K., & Werry, J. (2007). *The inter-agency plan for conduct disorder/severe antisocial behaviour 2007–2012* (M. o. S. Development Ed.). Wellington, New Zealand: Ministry of Social Development.
- Cohen, J. (1968). Weighted kappa: Nominal scale agreement provision for scaled disagreement or partial credit. *Psychological Bulletin*, *70*(4), 213–220. doi:10.1037/h0026256
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. doi:10.1037/0033-2909.112.1.155
- Cohen, M. (2005). *The costs of crime and justice*. New York, NY: Routledge.
- Collishaw, S., Maughan, B., Goodman, R., & Pickles, A. (2004). Time trends in adolescent mental health. *Journal of Child Psychology and Psychiatry*, *45*(8), 1350–1362. doi:10.1111/j.1469-7610.2004.00335.x
- Corrigan, A. (2002). *Social Competence Scale – Parent version, Grade 1/Year 2* (Fast Track Project Technical Report). Retrieved from <http://www.fasttrackproject.org/techrept/s/scp/scp2tech.pdf>
- Coyne, J. C., & Kwakkenbos, L. (2013). Triple P-Positive Parenting programs: The folly of basing social policy on underpowered flawed studies. *BioMed Central Medicine*, *11*(11), 1–3. doi:10.1186/1741-7015-11-11
- Daro, D. (2006). *Home visitation: Assessing progress, managing expectations*. Retrieved from <http://www.ounceofprevention.org/research/pdfs/HomeVisitation.pdf>
- David, O. (2014). The Rational Positive Parenting program for child externalizing behavior: Mechanisms of change analysis. *Journal of Evidence-Based Psychotherapies*, *14*(1), 21–38.
- David, O., David, D., & Dobrean, A. (2014). Efficacy of the Rational Positive Parenting program for child externalizing behavior: Can an emotion-regulation enhanced cognitive-behavioral parent program be more effective than a standard one? *Journal of Evidence-Based Psychotherapies*, *14*(2), 159–178.
- Donelan-McCall, N., Eckenrode, J., & Olds, D. (2009). Home visiting for the prevention of child maltreatment: Lessons learned during the past 20 years. *Pediatric Clinics of North America*, *56*(2), 389–403.
- Dunn, L. (2012). *Research report into Māori and non-Māori retention in Incredible Years Parent programme central north region*. Wellington, New Zealand: Ministry of Education.
- Durand, V., Hieneman, M., Clarke, S., Wang, M., & Rinaldi, M. (2013). Positive family intervention for severe challenging behavior I: A multisite randomized clinical trial. *Journal of Positive Behavior Interventions*, *15*(3), 133–143. doi:10.1177/1098300712458324
- Eames, C., Daley, D., Hutchings, J., Whitaker, C., Bywater, T., Jones, K., & Hughes, J. (2010). The impact of group leaders' behaviour on parents' acquisition of key

- parenting skills during parent training. *Behaviour Research and Therapy*, 48(2010), 1221–1226.
- Eames, C., Daley, D., Hutchings, J., Whitaker, C. J., Jones, K., Hughes, J. C., & Bywater, T. (2009). Treatment fidelity as a predictor of behaviour change in parents attending group-based parent training. *Child: Care, Health and Development*, 35(5), 603–612. doi:10.1111/j.1365-2214.2009.00975.x
- Eyberg, S., & Pinus, D. (1999). *The Eyberg Child Behavior Inventory and Sutter-Eyberg Student Behavior Inventory: Professional manual*. Lutz, FL: Psychological Assessment Resources.
- Fast Track Project. (2010–2011). *Social Competency Scale*. Retrieved from <http://www.fasttrackproject.org/techrept/s/scp/>
- Fergusson, D., Boden, J., & Hayne, H. (2011). *Childhood conduct problems*. Wellington, New Zealand: Office of the Prime Minister’s Science Advisory Committee.
- Fergusson, D., Boden, J., & Horwood, J. (2013). Nine-year follow-up of a home-visitation program: A randomised trial. *Pediatrics*, 131(2), 297–303. doi:10.1542/peds.2012-1612
- Fergusson, D., Horwood, J., & Ridder, E. (2005). Show me the child at seven: The consequences of conduct problems in childhood for psychosocial functioning in adulthood. *Journal of Child Psychology and Psychiatry*, 46(8), 837–849. doi:10.1111/j.1469-7610.2004.00387.x
- Fergusson, D., Horwood, L., & Lesley, S. (2013). A preliminary evaluation of the Incredible Years Teacher Programme. *New Zealand Journal of Psychology*, 42(2), 51–56.
- Fergusson, D., Stanley, L., & Horwood, J. (2009). Preliminary data on the efficacy of the Incredible Years Basic Parent Programme in New Zealand. *Australian and New Zealand Journal of Psychiatry*, 43(1), 76–79. doi:10.1080/00048670802534382.
- Ford, T., Goodman, R., & Meltzer, H. (2003). The British Child and Adolescent Mental Health Survey 1999: The prevalence of DSM-IV disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42(10), 1203–1211. doi:10.1097/00004583-200310000-00011
- Frampton, I., McArthur, C., Crowe, B., Linn, J., & Lovering, K. (2008). Beyond parent training: Predictors of clinical status and service use two to three years after Scallywags. *Clinical Child Psychology and Psychiatry*, 13(4), 593–608.
- Furlong, M., McGilloway, S., Bywater, T., Hutchings, J., Smith, S. M., & Donnelly, M. (2013). Cochrane review: Behavioural and cognitive-behavioural group-based parenting programmes for early-onset conduct problems in children aged 3 to 12 years. *Evidence-based child health: A Cochrane Review Journal*, 8(2), 318–692.
- Gardner, F., Burton, J., & Klimes, I. (2006). Randomised controlled trial of a parenting intervention in the voluntary sector for reducing child conduct problems: Outcomes and mechanisms of change. *Journal of Child Psychology and Psychiatry*, 47(11), 1123–1132.

- Gardner, F., Hutchings, J., Bywater, T., & Whitaker, C. (2010). Who benefits and how does it work? Moderators and mediators of outcome in an effectiveness trial of a parenting intervention. *Journal of Clinical Child and Adolescent Psychology, 39*(4), 568–580. doi:10.1080/15374416.2010.486315
- Garland, A. F., Haine-Schlagel, R., Accurso, E. C., Baker-Ericzen, M. J., & Brookman-Frazee, L. (2012). Exploring the effect of therapists' treatment practices on client attendance in community-based care for children. *Psychological Services, 9*(1), 74–88. doi:10.1037/a0027098
- Gelfand, D., & Teti, D. (1990). The effects of maternal depression on children. *Clinical Psychology Review, 10*(3), 329–353. doi:10.1016/0272-7358(90)90065-1
- Gluckman, P. (2011). *Improving the transition: Reducing social and psychological morbidity during adolescence*. Wellington, New Zealand: Office of the Prime Minister's Science Advisory Committee.
- Gomby, D. (2005). *Home visitation in 2005: Outcomes for children and parents*. Washington, DC: Committee for Economic Development.
- Goodman, S., Rouse, M., Connell, A., Broth, M., Hall, C., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical Child & Family Psychology Review, 14*(1), 1–27. doi:10.1007/s10567-010-0080-1
- Gray, D. (2013). *Incredible Years Pilot Study: Technical appendix*. Retrieved from Wellington, New Zealand:
- Hartman, R., Stage, S., & Webster-Stratton, C. (2002). A growth curve analysis of parent training outcomes: Examining the influence of child risk factors (inattention, impulsivity, and hyperactivity problems), parental and family risk factors. *Journal of Child Psychology and Psychiatry, 43*(7), 388–398.
- Heckman, J. (2006). *Investing in disadvantaged young children is an economically efficient policy*. Paper presented at the Building the Economic Case for Investments in Preschool Conference, New York. Paper retrieved from
- Higgins, J., Altman, D., Gøtzsche, P., Jüni, P., Moher, D., Oxman, A., . . . Sterne, J. (2011). The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *British Medical Journal, 343*. doi:10.1136/bmj.d5928
- Higgins, J., & Green, S. (Eds.). (2011). *Cochrane handbook for systematic reviews of interventions version 5.1.0*.
- Higgins, J., Thompson, S., Deeks, J., & Altman, D. (2003). Measuring inconsistency in meta-analyses. *British Medical Journal, 327*(7414), 557–560.
- Hutchings, J. (2012). Introducing, researching, and disseminating the Incredible Years Programmes in Wales. *International Journal of Conflict and Violence, 6*(2), 225–233.
- Hutchings, J., Bywater, T., & Daley, D. (2007). Early prevention of conduct disorder: How and why did the north and mid Wales Sure Start study work? *Journal of Children's Services, 2*(2), 4–14.

- Hutchings, J., Bywater, T., Daley, D., Gardner, F., Whitaker, C., Jones, K., . . . Edwards, R. (2007). Parenting intervention in Sure Start services for children at risk of developing conduct disorder: Pragmatic randomised controlled trial. *British Medical Journal*, *334*(7595), 678. doi:10.1136/bmj.39126.620799.55
- Hutchings, J., Bywater, T., Williams, M., Lane, E., & Whitaker, C. (2012). Improvements in maternal depression as a mediator of child behaviour change. *Psychology*, *3*(Special issue), 795–801. doi:10.4236/psych.2012.329120
- Hutchings, J., Lane, E., & Kelly, J. (2004). Comparison of two treatments for children with severely disruptive behaviours: A four-year follow-up. *Behavioural and Cognitive Psychotherapy*, *32*(1), 15–30. doi:10.1017/S1352465804001018
- Ingoldsby, E. M. (2010). Review of interventions to improve family engagement and retention in parent and child mental health programs. *Journal of Child and Family Studies*, *19*(5), 629–645. doi:10.1007/s10826-009-9350-2
- Ireland, J. L., Sanders, M. R., & Markie-Dadds, C. (2003). The impact of parent training on marital functioning: A comparison of two group versions of the Triple P-Positive Parenting Program for parents of children with early-onset conduct problems. *Behavioural and Cognitive Psychotherapy*, *31*(2), 127–142. doi:10.1017/S1352465803002017
- Jones, D. (2014). Future directions in the design, development, and investigation of technology as a service delivery vehicle. *Journal of Clinical Child & Adolescent Psychology*, *43*(1), 128–142. doi:10.1080/15374416.2013.859082
- Jones, D., Forehand, R., Cuellar, J., Parent, J., Honeycutt, A., Khavjou, O., . . . Newey, G. (2014). Technology-Enhanced Program for child disruptive behavior disorders: Development and pilot randomized control trial. *Journal of Clinical Child and Adolescent Psychology*, *43*(1), 88–101. doi:10.1080/15374416.2013.822308
- Jones, K., Daley, D., Hutchings, J., Bywater, T., & Eames, C. (2008). Efficacy of the Incredible Years Programme as an early intervention for children with conduct problems and ADHD: Long-term follow-up. *Child: Care, Health and Development*, *34*(3), 380–390. doi:10.1111/j.1365-2214.2008.00817.x
- Kaminski, J., Valle, L., Filene, J., & Boyle, C. (2008). A meta-analytic review of components associated with parent training program effectiveness. *Journal of Abnormal Child Psychology*, *36*(4), 567–589. doi:10.1007/s10802-007-9201-9
- Kazdin, A. E. (2005). *Parent management training: Treatment for oppositional, aggressive, and antisocial behavior in children and adolescents*. New York, NY: Oxford University Press.
- Kazdin, A. E., & Whitley, M. K. (2003). Treatment of parental stress to enhance therapeutic change among children referred for aggressive and antisocial behavior. *Journal of Consulting and Clinical Psychology*, *71*(3), 504–515. doi:10.1037/0022-006X.71.3.504
- Kendrick, D., Elkan, R., Hewitt, M., Dewey, M., Blair, M., Robinson, J., . . . Brummell, K. (2000). Does home visiting improve parenting and the quality of the home

environment? A systematic review and meta analysis. *Archives of Disease in Childhood*, 82, 443–451. doi:10.1136/adc.82.6.443

- Larsson, B., Fossum, S., Clifford, G., Drugli, M., Handegård, B., & Mørch, W.-T. (2009). Treatment of oppositional defiant and conduct problems in young Norwegian children: Results of a randomized controlled trial. *European Child and Adolescent Psychiatry*, 18(1), 42–52. doi:10.1007/s00787-008-0702-z
- Lees, D., & Fergusson, D. (2015). A study to assess the acceptability of adding home parent support along with the Incredible Years® Parent Programme. *New Zealand Journal of Psychology*, 44(1), 40–44.
- Lees, D., Fergusson, D., Frampton, C., & Merry, S. (2014). A pilot study to evaluate the efficacy of adding a structured home visiting intervention to improve outcomes for high-risk families attending the Incredible Years Parent Programme: Study protocol for a randomised controlled trial. *Trials*, 15(66). doi:10.1186/1745-6215-15-66
- Lees, D., & Ronan, R. (2008). Engagement and effectiveness of parent management training (Incredible Years) for solo high-risk mothers: A multiple baseline evaluation. *Behaviour Change*, 25(2), 109–128.
- Leijten, P., Raaijmakers, M., de Castro, B., & Matthys, W. (2013). Does socioeconomic status matter? A meta-analysis on parent training effectiveness for disruptive child behavior. *Journal of Clinical Child & Adolescent Psychology*, 42(3), 384–392. doi:10.1080/15374416.2013.769169
- Leung, C., Tsang, S., & Heung, K. (2013). Pilot evaluation of a home visit parent training program in disadvantaged families. *Research on Social Work Practice*, 23(4), 397–406. doi:10.1177/1049731513482378
- Liberati, A., Altman, D., Tetzlaff, J., Mulrow, C., Gøtzsche, P., Ioannidis, J., . . . Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. *PLoS Med*, 6(7), e1000100. doi:10.1371/journal.pmed.1000100
- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review*, 20(5), 561–592. doi:10.1016/S0272-7358(98)00100-7
- Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review*, 26(1), 86–104. doi:10.1016/j.cpr.2005.07.004
- McCart, M. R., Priester, P. E., Davies, H. W., & Azen, R. (2006). Differential effectiveness of behavioral parent-training and cognitive-behavioral therapy for antisocial youth: A meta-analysis. *Journal of Abnormal Child Psychology*, 34(4), 525–541.
- McDaniel, B., Braiden, H., Onyekwelu, J., Murphy, M., & Hassan, R. (2011). Investigating the effectiveness of the Incredible Years Basic Parenting Programme for foster carers in Northern Ireland. *Child Care in Practice*, 17(1), 55–67. doi:10.1080/13575279.2010.522979

- McGilloway, S., Mhaille, G., Bywater, T., Furlong, M., Leckey, Y., Kelly, P., . . . Donnelly, M. (2012). A parenting intervention for childhood behavioral problems: A randomized controlled trial in disadvantaged community-based settings. *Journal of Consulting and Clinical Psychology, 80*(1), 116–127.
- Miller, G. E., & Prinz, R. J. (2003). Engagement of families in treatment for childhood conduct problems. *Behavior Therapy, 34*(4), 517–534. doi:10.1016/S0005-7894%2803%2980033-3
- Ministry of Education. (2011). *Positive behaviour for learning action plan*. Retrieved from <http://www.minedu.govt.nz/NZEducation/EducationPolicies/SpecialEducation/OurWorkProgramme/PositiveBehaviourForLearning/About.aspx>
- Ministry of Health. (2016). *New Zealand Health Strategy: Future direction*. Retrieved from <http://www.health.govt.nz/publication/new-zealand-health-strategy-2016>
- Nievar, M., Van Egeren, L., & Pollard, S. (2010). A meta-analysis of home visiting programs: Moderators of improvements in maternal behavior. *Infant Mental Health Journal, 31*(5), 499–520.
- Nock, M. K., & Kazdin, A. E. (2005). Randomized controlled trial of a brief intervention for increasing participation in parent management training. *Journal of Consulting and Clinical Psychology, 73*(5), 872–879. doi:10.1037/0022-006X.73.5.872
- Olds, D., Henderson, C., Kitzman, H., Eckenrode, J., Cole, R., & Tatelbaum, R. (1999). Prenatal and infancy home visitation by nurses: Recent findings. *Future of Children, 9*(1), 44–65.
- Patterson, J., Barlow, J., Mockford, C., Klimes, I., Pyper, C., & Stewart-Brown, S. (2002). Improving mental health through parenting programmes: Block randomised controlled trial. *Archives of Disease in Childhood, 87*(6), 474–477. doi:10.1136/adc.87.6.472
- Peacock, S., Konrad, S., Watson, E., Nickel, D., & Muhajarine, N. (2013). Effectiveness of home visiting programs on child outcomes: A systematic review. *BioMed Central Public Health, 13*(17), 1–14.
- Petrosino, A., & Soydan, H. (2005). The impact of program developers as evaluators on criminal recidivism: Results from meta-analyses of experimental and quasi-experimental research. *Journal of Experimental Criminology, 1*(4), 435–450. doi:10.1007/s11292-005-3540-8
- Pianta, R. C., & Egeland, B. (1990). Life stress and parenting outcomes in a disadvantaged sample: Results of the Mother-Child Interaction Project. *Journal of Clinical Child Psychology, 19*(4), 329–336. doi:10.1207/s15374424jccp1904_4
- Prinz, R. J., & Miller, G. E. (1994). Family-based treatment for childhood antisocial behavior: Experimental influences on dropout and engagement. *Journal of Consulting and Clinical Psychology, 62*(3), 645–650. doi:10.1037/0022-006X.62.3.645
- Prochaska, J. O., & DiClemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research & Practice, 19*(3), 276–288.

- Reyno, S., & McGrath, P. (2006). Predictors of parent training efficacy for child externalizing behavior problem – A meta-analytic review. *Journal of Child Psychology and Psychiatry*, 47, 99–111.
- Salmon, K., Dittman, C., Sanders, M., Burson, R., & Hammington, J. (2014). Does adding an emotion component enhance the Triple P-Positive Parenting Program? *Journal of Family Psychology*, 28(2), 244–252. doi:10.1037/a0035997
- Sanders, M., Markie-Dadds, C., Tully, L., & Bor, W. (2000). The Triple P-Positive Parenting Program: A comparison of enhanced, standard, and self-directed behavioral family intervention for parents of children with early onset conduct problems. *Journal of Consulting and Clinical Psychology*, 68(4), 624–640. doi:10.1037/0022-006X.68.4.624
- Sar, B., Antle, B., Bledsoe, L., Barbee, A., & Van Zyl, M. (2010). The importance of expanding home visitation services to include strengthening family relationships for the benefit of children. *Children and Youth Services Review*, 32(2), 198–205.
- Schulz, K. F., Altman, D. G., & Moher, D. (2010). CONSORT 2010 statement: Updated guidelines for reporting parallel group randomised trials. *Trials*, 11(32). doi:10.1186/1745-6215-11-32
- Scott, S. (2007). Conduct disorders in children. *British Medical Journal*, 334(7595), 646. doi:10.1136/bmj.39161.370498.BE
- Scott, S., & Dadds, M. (2009). Practitioner review: When parent training doesn't work: Theory-driven clinical strategies. *Journal of Child Psychology and Psychiatry*, 50(12), 1441–1450. doi:10.1111/j.1469-7610.2009.02161.x
- Scott, S., Knapp, M., Henderson, J., & Maughan, B. (2001). Financial cost of social exclusion: Follow up study of antisocial children into adulthood. *British Medical Journal*, 323, 191–194. doi:10.1136/bmj.323.7306.191
- Scott, S., Spender, Q., Doolan, M., Jacobs, B., & Aspland, H. (2001). Multicentre controlled trial of parenting groups for childhood antisocial behaviour in clinical practice. *British Medical Journal*, 323(7306), 194–197.
- Shaw, D., Gilliom, M., Ingoldsby, E., & Nagin, D. (2003). Trajectories leading to school-age conduct problems. *Developmental Psychology*, 39(2), 189–200.
- Stanley, P., & Stanley, L. (2005). Prevention through parent training: Making more of a difference. *Kairaranga*, 6(1), 47–54.
- Statistics New Zealand. (2015). How is our Māori population changing? Retrieved from http://www.stats.govt.nz/browse_for_stats/people_and_communities/maori/maori-population-article-2015.aspx?gclid=CjwKEAjwuPi3BRClk8TyyMLloXgSJAAC0XsjlXtH aHsCDmgIcWpYntlhMrIYvq6mbWo3HeXNSesrBoCj7Lw wCB
- Sturrock, F., Gray, D., Church, J., Fergusson, D., Horwood, J., Poulton, R., . . . McGovern, J. (2013). *Incredible Years: Pilot Study: Evaluation report*. Wellington, New Zealand: Ministry of Social Development.

- Sturrock, F., Gray, D., Fergusson, D., Horwood, J., & Smits, C. (2014). *Incredible Years: Follow up study: Long-term follow-up of the New Zealand Incredible Years Pilot Study*. Retrieved from <http://www.msd.govt.nz/about-msd-and-our-work/publications-resources/evaluation/incredible-years-follow-up-study/index.html>
- The Cochrane Collaboration. (2012). Review Manager (RevMan) (Version 5.1) [Computer program]. Copenhagen, Denmark: Author.
- Thomas, D. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation, 27*(2), 237–246. doi:10.1177/1098214005283748
- Tremblay, R., Nagin, D., Séguin, J., Zoccolillo, M., Zelazo, P., Boivin, M., . . . Japel, C. (2004). Physical aggression during early childhood: Trajectories and predictors. *Pediatrics, 114*(1), 43–50. doi:10.1542/peds.114.1.e43
- Viera, A. J., & Garrett, J. M. (2005). Understanding interobserver agreement: The kappa statistic. *Family Medicine, 37*(5), 360–363.
- Webster-Stratton, C., & Herbert, M. (1994). *Troubled families – Problem children*. New York, NY: Wiley.
- Webster-Stratton, C. (1990a). Enhancing the effectiveness of self-administered videotape parent training for families with conduct-problem children. *Journal of Abnormal Child Psychology, 18*(5), 479–492.
- Webster-Stratton, C. (1990b). Stress: A potential disruptor of parent perceptions and family interactions. *Journal of Clinical Child Psychology, 19*(4), 302–312. doi:10.1207/s15374424jccp1904_2
- Webster-Stratton, C. (1994). Advancing videotape parent training: A comparison study. *Journal of Consulting and Clinical Psychology, 62*(3), 583–593.
- Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: Strengthening parenting competencies. *Journal of Consulting and Clinical Psychology, 66*(5), 715–730. doi:10.1037/0022-006X.66.5.715
- Webster-Stratton, C. (1999). *The parent and child series handbook*. Seattle, WA: Seth Enterprises.
- Webster-Stratton, C. (2000). *The Incredible Years training series*. Washington, DC: United States Department of Justice.
- Webster-Stratton, C. (2009). Affirming diversity: Multi-cultural collaboration to deliver the Incredible Years Parent Programs. *International Journal of Child Health and Human Development, 2*(1), 17–32.
- Webster-Stratton, C. (2011). *The Incredible Years® parents, teacher, and children's training series: Program content, methods, research and dissemination 1980–2011*. Seattle, WA: Incredible Years.

- Webster-Stratton, C., & Reid, J. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, 33(1), 105–124.
- Webster-Stratton, C., Reid, M., & Marsenich, L. (2014). Improving therapist fidelity during implementation of evidence-based practices: Incredible Years Program. *Psychiatric Services*, 65(6), 789–795. doi:10.1176/appi.ps.201200177
- Webster-Stratton, C., Rinaldi, J., & Reid, J. (2011). Long-term outcomes of Incredible Years Parenting Program: Predictors of adolescent adjustment. *Child and Adolescent Mental Health*, 16(1), 38–46. doi:10.1111/j.1475-3588.2010.00576.x
- Williams, B. W., Kessler, H. A., & Williams, M. V. (2015). Relationship among knowledge acquisition, motivation to change, and self-efficacy in CME participants. *Journal of Continuing Education in the Health Professions*, 35(Supplement 1), S13–S21. doi:10.1002/chp.21291
- Wilson, P., Rush, R., Hussey, S., Puckering, C., Sim, F., Allely, C., . . . Gillberg, C. (2012). How evidence-based is an 'evidence-based parenting program'? A PRISMA systematic review and meta-analysis of Triple P. *BioMed Central Medicine*, 10(1), 130–146.
- Wooller, S. (2015). *A preliminary evaluation of the Incredible Years Teacher Programme*. (Master's thesis, Massey University, New Zealand). Retrieved from <http://hdl.handle.net/10179/6970 - sthash.EjYJnDof.dpuf>