



THE CHANGING LIVES INITIATIVE

An Early Intervention Approach to ADHD

Final report on Outcomes, Process and Economic Evaluations

Full Report

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We extend our sincere thanks to the Project Partners whose shared vision and commitment to supporting families led to the creation and delivery of The Changing Lives Initiative. We are indebted to the project Steering Group for their time, knowledge and determination in driving the project to success.

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Match-funding for the project has been provided by the Department for Health in Northern Ireland, the Department of Health in Ireland as well as by the project partners.

Explanatory Note

ADHD focused Incredible Years Parent Training Programme (ADHD IY Parent Programme): The Incredible Years Basic Parent Training Programme (IYBP; Webster-Stratton, 1989) is a group-based intervention underpinned by the principles of behavioural and social learning theory. The Changing Lives Initiative offers a lengthened and ADHD-focused programme. The ADHD-focused programme consists of the Incredible Years Basic Parent Training Programme, extended to be delivered over 20 sessions and incorporating elements of the Incredible Years Advanced Parent Programme. The programme comprises 2.5-hour weekly group sessions, delivered by two programme facilitators to approximately 12 parents per group.

ADHD Information & Awareness Workshop for Parents (Information & Awareness Sessions): The initial part of The Changing Lives Initiative intervention. These 1-2 hour sessions were designed to create a better understanding about ADHD and associated behaviours, and to provide parents with basic strategies and effective practices to support children's social-emotional development and preventing challenging behaviours.

ADHD Information & Awareness Workshop for Professionals (Professionals' Sessions): As well as working with families, The Changing Lives Initiative offers a specialist training programme for those working with young children, in particular teachers, early years professionals and health and social care workers. These 2-2.5 hour sessions are delivered by the project psychologist and aim to help participants gain additional skills to support the children presenting with behaviours consistent with ADHD.

Project Partners: These are the five organisations involved in the management, delivery and evaluation of The Changing Lives Initiative project, namely: Archways, Dundalk Institute of Technology (DkIT), The Genesis Programme, Colin Neighbourhood Partnership and NHS Highland.

Steering Committee (Steering Group) is made up of senior representatives of the project partners and is responsible for overseeing the implementation and management of the project. The Steering Group has met every 4-6 weeks throughout the project.

Expert Advisory Group (EAG) is a committee of experts who have agreed to share their knowledge with the project partners. They are drawn from different disciplines and have agreed to provide guidance and comment on project outputs as well as on any ethical issues arising.

Project Manager is responsible for the coordination of The Changing Lives Initiative across the three project locations and overall delivery of the project plans.

Programme Facilitators – refers to the project team members on each site who deliver The Changing Lives Initiative interventions. This includes delivering the **ADHD Information & Awareness Workshop for Parents** and the **ADHD-focused Incredible Years Parent Training Programme**. When delivering the ADHD-focused Incredible Years Parent Training Programme, programme facilitators are sometimes referred to as Group Leaders – this is the title Incredible Years use to describe people who deliver their programmes.

Local Coordinators are the dedicated members of staff on each of the project sites who are responsible for the coordination of The Changing Lives Initiative in their area.

Incredible Years Mentor (IY Mentor) are highly experienced and certified Incredible Years group leaders who are authorized by Incredible Years to provide training and on-going mentoring to IY programme facilitators (Group Leaders)

T1 (Timepoint 1): Refers to when data was first gathered from participants in the project evaluations (baseline). For the three evaluations in this report, this refers to just before parents commenced the **ADHD-focused Incredible Years Parent Training Programme**.

T2 (Timepoint 2): Refers to the second time data was gathered from participants in the project evaluations. For the three evaluations in this report, this refers to just after parents completed the **ADHD-focused Incredible Years Parent Training Programme** (post-programme).

T3 (Timepoint 3): Refers to the third time data was gathered from participants in the project evaluations. For the three evaluations in this report, this refers to 6 months after parents completed the **ADHD-focused Incredible Years Parent Training Programme** (6 months post-programme).

T4 (Timepoint 4): Refers to the fourth time data was gathered from participants in the project evaluations. For the three evaluations in this report, this refers to 1 year after parents completed the **ADHD-focused Incredible Years Parent Training Programme** (1 year post-programme).

DRAFT

Foreword

For the past three years (2017-2020) the Interreg VA funded project, The Changing Lives Initiative, has been working to establish a new community-led early intervention treatment model for Attention Deficit Hyperactivity Disorder (ADHD). The Changing Lives Initiative is a cross-border project and has been delivered in Northern Ireland (the greater Belfast and Lisburn areas), Republic of Ireland (County Louth and surrounding border areas) and in Western Scotland (the Argyll & Bute region).

Now in its final month, the Project Partners wish to set out the results of The Changing Lives Initiative and the project evaluations. The following report sets out the context to the project, the intervention, and the results of the three project evaluations.

Research is vital in providing the evidence we need to transform services and improve outcomes. All the Project Partners recognise the imperative of robust research and evidence. Without it, we cannot improve the quality and effectiveness of our services. The use of evaluations allows us to measure the impact of our work and understand better what works well and what does not. Research can shed light on unknowns, fill gaps in knowledge and change the way that healthcare professionals work.

We hope that the evidence and learning provided by the evaluations carried out as part of this project will provide a solid basis for future discussion and decision making by Health Services, Policy Makers, Funders and Service Commissioners.

Aileen O'Donoghue
Chairperson, The Changing Lives Initiative Steering Group



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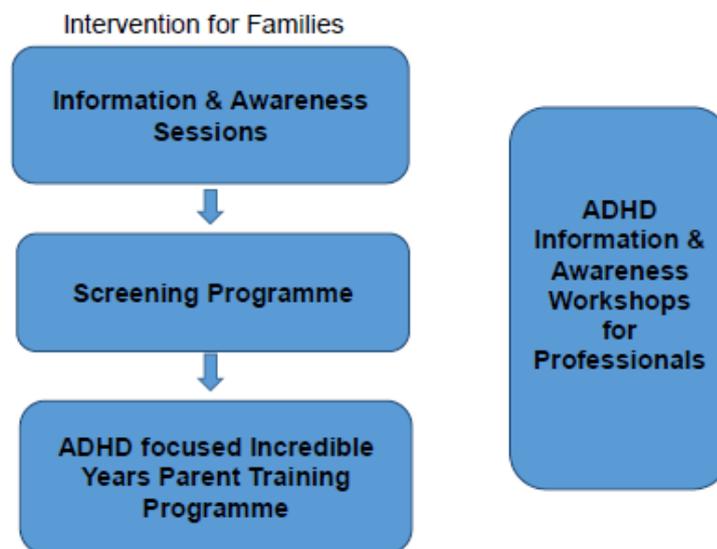
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1 The Changing Lives Initiative

Recognising a lack of availability of early and psycho-social interventions for ADHD in the Republic of Ireland, Northern Ireland and in Scotland, a number of organisations came together in 2016 and developed a project plan for a cross-border project, The Changing Lives Initiative. Funding was secured through the EU's Interreg VA programme, with match funding from the Departments of Health in Northern Ireland and the Republic of Ireland, as well as the Project Partners, for a three-year project to commence in late 2017.

The Changing Lives Initiative is a community-based project, which sets out to create a better understanding of ADHD and to provide an intervention programme for families with children (aged 3-7) experiencing behaviours consistent with ADHD. The project offers a tiered intervention for families starting with Information and Awareness Sessions, through to a Screening Programme and finally an intensive intervention in the form of an evidence based ADHD-focused Incredible Years Parent Training Programme. The intervention is primarily delivered to a prediagnosis population; with potential families being identified via a range of agencies including schools, preschools, GPs, family support hubs and paediatric health services.



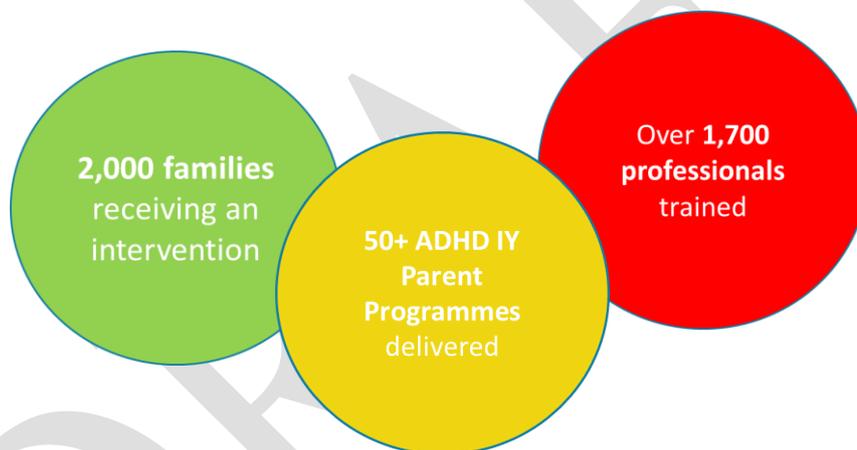
The Incredible Years Basic Parent Training Programme (IYBP; Webster-Stratton, 1989) is a group-based intervention underpinned by the principles of behavioural and social learning theory. The programme has been extensively evaluated as an intervention for children (aged 3-7 years) with conduct problems and its effectiveness is now well-established. The Changing Lives Initiative offers a lengthened (18-20 sessions versus 14 sessions basic programme) and ADHD-focused programme.

As well as working with families, the project offers a specialist training programme for those working with young children, in particular teachers and early years professionals.

The Changing Lives Initiative has involved project partners from both the Community and Statutory Health Sectors with Archways as Lead Partner; Dundalk Institute of Technology as Research Partner; Colin Neighbourhood Partnership delivering the programme in Belfast and Lisburn; The Genesis Programme (Louth Leader Partnership) delivering the programme in Louth and surrounding border areas; and NHS Highland (Argyll & Bute Health and Social Care Partnership) delivering the programme in Scotland. The project has successfully engaged both urban and remote communities in the different jurisdictions and is working with some of the most disadvantaged communities in these areas.



This new early intervention model of treatment has been successfully delivered across the three project sites and when the project is complete more than 2,000 families will have received an intervention, including the delivery of more than 50 ADHD-focused Incredible Years Parent Training Programmes and the training of over 1,700 professionals.



In addition to delivery of the Information and Awareness sessions and Parent Programme, The Changing Lives Initiative has developed a Project App to help disseminate information while also increasing the reach and sustainability of the project. The App was launched in March 2020 and has been utilised by more than 600 parents and professionals from both within and outside the project areas. The App helps families understand what ADHD is and provides practical strategies and tools for parents to use with their children. The App is also extremely useful for those working with children, helping them to understand ADHD and how they might support children who have issues with inattention, hyperactivity or impulsivity. The App continues to be available to parents/guardians and professionals post project and can be downloaded at www.changinglivesinitiative.com

In March 2020 the COVID -19 pandemic brought changes to how The Changing Lives Initiative continued to support families. Along with other projects throughout the world, The Changing Lives Initiative had to adapt to the changing circumstances and restrictions arising from the pandemic. The added strain on families, who had lost support structures and routines due to the restrictions, made it even more important that the project continue its work. The Changing Lives Initiative adapted quickly and completed some of the programmes underway in spring 2020 through remote delivery methods. Over the summer months, the project went on to pilot the first ever fully remotely delivered ADHD IY Parent Programme. From August 2020, Information and Awareness workshops for both practitioners and parents/caregivers were moved online and extended, with more emphasis on effective strategies to support children’s behaviour. The Screening Programme was also then successfully adapted to remote delivery via telephone. A full cohort of remotely delivered ADHD IY Parent Programmes were then delivered from September 2020 through to late January 2021.

Although the project evaluations were mostly complete at this stage, it was felt important to gather feedback from parents in relation to the remotely delivered programmes and so a piece of qualitative research was added to the evaluations in order to explore the acceptability of the remotely delivered ADHD IY Parent Programme, a summary of the findings are included in this report.

LAUNCH OF THE CHANGING LIVES INITIATIVE

Mairead McGuinness MEP and Gina McIntyre, CEO of SEUPB with members of the Steering Group and Project Staff at the launch of The Changing Lives Initiative at the Carrickdale Hotel, Dundalk on the 6th November 2017



The Mid Project Conference, Belfast, May 2019



Stakeholder Event and Launch of Project App, Dundalk, March 2020



2 Executive Summary

The Changing Lives Initiative is a community-based initiative aimed to create a better understanding about ADHD and provide an early intervention programme for families with children (3yrs-7yrs) experiencing behaviours consistent with ADHD. Launched in November 2017, the 3-year initiative offered a programme for families consisting of Information and Awareness Sessions, a Screening Programme, and an intervention in the form of an ADHD focused Incredible Years Parent Training Programme. The Initiative was delivered in project areas within the Republic of Ireland, Northern Ireland, and Western Scotland. As part of the Initiative, three evaluations were conducted: An Outcomes Evaluation, a Process Evaluation and Economic Evaluation. This report presents the findings of these evaluations.

ADHD is a neuro-developmental disorder characterised by inattention, hyperactivity and impulsivity which causes significant difficulties throughout many aspects of a child's life, including their family, school and social life. ADHD is one of the most common disorders of childhood, estimated to affect 5.29% of children. It is the most common reason for referral to mental health services in childhood in Ireland (35.7% of all cases) (CAMHS Fourth Annual Report, 2011-2012). ADHD has a pervasive and significant effect on many aspects of a child's life, including family, school and social environments. The majority of people diagnosed with ADHD in childhood continue to meet criteria for the disorder as adults. Adults with ADHD have higher levels of unemployment (Hechtman, 2016) and also experience greater levels of workplace impairment, reduced productivity and absenteeism. Those with ADHD also experience increased rates of substance abuse and misuse, traffic citations, offending behaviours and incarceration (Breslau et al., 2011; Küpper et al; 2012). Many children have difficulty concentrating, sitting still or may act before they think and some children may experience behaviours that are consistent with ADHD. However, this does not always mean that they will go on to be diagnosed with ADHD. It is the frequency, pattern and intensity of these symptoms which denote the presence of ADHD.

Group-based parent programmes are recommended as the first course of intervention for young children with behaviour consistent with ADHD by leading international bodies such as the National Institute for Health and Care Excellence (NICE UK) and the Global ADHD Working Group. Group-based parent programmes may be supplemented with additional child-focused programmes to assist in the development of regulatory behaviours in social, emotional and behavioural domains. While there are dozens of evidence-informed parenting programmes available, NICE guidelines currently recommend that the parenting programme of choice should be the Incredible Years Programme developed by Carolyn Webster Stratton in the University of Washington, Seattle, USA. The Webster-Stratton *Incredible Years (IY) Parent, Teacher and Child Training Series* was designed for the early treatment and prevention of conduct disorders in childhood (Webster-Stratton and Hancock, 1998): the IY series comprises a suite of comprehensive, specially designed programmes, which target children aged 0-12 years, their parents and teachers. The programmes are designed to improve social and emotional functioning and reduce or prevent emotional and behavioural problems.

Group-based early intervention programmes offer a potentially effective means of improving the lives of families and children with behaviour consistent with ADHD. Such interventions teach behavioural strategies to parents, guardians and teachers, increasing resilience for children in their early years. Developmentally sensitive preventive interventions offer the potential not only to alter the chronically impaired course of ADHD, but to prevent the onset of many of the social, emotional and academic difficulties that impede successful treatment when the child is older (Halperin, Bédard & Curchack-Lichtin, 2012). Lack of evidence about how early intervention and prevention programmes work in real-world settings is restricting local learning to inform service delivery and future planning to meet the needs of children aged 3 to 7 years with behavioural difficulties.

The **Outcomes Evaluation** aimed to explore the effectiveness of the ADHD-focused Incredible Years Parent Training Programme on participating parents, their child's behaviour and parent/child relationship. The research design was a non-randomized, pre-post evaluation. Five measures were used to measure child's behaviour and to elicit the parent/guardian experience in relation to discipline and stress. These questionnaires were:

- The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1999), which looks at social and emotional issues.
- The Conners Parent Rating Scale (3rd Edition) Short Form (CPRS; Conners, 2008), a widely used and well validated instrument that allows for the identification of comorbidities and ADHD behaviours.
- The Vanderbilt (Wolraich et al., 1998), used to assess ADHD symptoms and their effects on behaviour and academic performance.
- The Parenting Scale (Arnold et al., 1993), which explores disciplinary practices.
- The Parenting Stress Index (Abidin, 1995), which measures the parent/guardians stress levels.

Quantitative data were collected at four time points – at baseline (T1), post programme (T2), 6 months post programme (T3) and 1 year post programme (T4). Data were gathered from all locations where the Initiative was delivered.

The Outcomes Evaluation examined the following questions:

- Does the ADHD-focused Incredible Years Parent Training Programme lead to an improvement of parenting skills and competencies?
- Does the ADHD-focused Incredible Years Parent Training Programme lead to improvements in parent /child functioning?
- Does access and exposure to the ADHD-focused Incredible Years Parent Training Programme improve the behaviour of young children (aged 3-7 years) who have behaviours consistent with ADHD?

The **Process Evaluation** aimed to explore the mechanisms and challenges involved in developing and delivering the intervention in different locations. Semi-structured interviews were carried out with programme participants, staff and Project Partners. In addition, fidelity and participant satisfaction measures were examined for a number of programmes. The key research questions which guided the Process Evaluation were:

- Has the intervention been delivered with fidelity?
- What factors facilitate or inhibit effective implementation?
- What are the experiences of parents and project stakeholders?

The **Economic Evaluation** adopted a cost consequence analysis. As there was no control group, it compared costs six months prior to the intervention and six months post completion of the intervention. Data were collected for the cost of the intervention through facilitator cost diaries. Data for the frequency of health and social care service use for relevant children of parents attending the intervention were collected using the Client Service Receipt Inventory (CSRI) (Beecham & Knapp, 2001). These were completed by parents at baseline (before intervention), on completion, and six months post intervention. The CSRI provided a structured record of the type and frequency of service use, such as visits to emergency departments and outpatient clinics etc. The perspective of the analysis for the UK jurisdictions was that of the NHS and for Ireland it was the HSE. As costs and outcomes in relation to ADHD are not borne exclusively by the health service, a broader perspective (societal) was also explored. Costs falling on the education and social care sectors and the economy more generally (e.g. reduced productivity/wages of family members of children with ADHD) were also explored.

It is recognised that undiagnosed and/or poorly managed ADHD has the potential to have an economic impact over the lifetime of an individual (and family) with ADHD. The time horizon of this study was limited to data collected six months prior to and six months following completion of the intervention programme under consideration. Modelling long-term costs and benefits as a result of this intervention is possible but beyond the scope of this evaluation.

The key questions which guided the Economic Evaluation were:

- What is the cost of delivering the ADHD-focused Incredible Years Parent Training Programme in Ireland, Northern Ireland and Scotland?
- Are there differences in resource utilisation (relating to health, social care and education) before and after engagement with the programme?

The **Qualitative Research on Remote Delivery**, in the wake of COVID-19 lockdowns, sought to understand remote delivery from the participant's perspective. All participants who had taken part in the remotely delivered ADHD IY Parent Programmes in Louth and Belfast were invited to either a Zoom focus group or to give feedback during routine follow up calls with the project psychologist. Feedback was collated and thematically analysed using questions asked as an initial framework.

3 Key Findings

Children and Families

- Parents/guardians with children with behaviours consistent with ADHD reported **improved disciplinary practices** across all time points of the research. Specifically, they reported that since completing the ADHD-focused IY Parent Programme, they were more likely to employ positive parental strategies when their child misbehaved, less likely to overact and overall their disciplinary practices had improved after taking part in the parent programme.
- Parent/guardians reported that they experienced **parenting as less stressful** after taking part in the parent programme and found their child less difficult to parent. Other findings were improved parent-child interactions and a reduction in the distress they experienced in relation to their role as parent/guardian.
- Parental reports also indicated a consistent improvement with regard to children's **concentration, attention levels and distractibility**. Reductions in these behavioural features were observable across all time points. The percentage of children with the Predominantly ADHD Inattentive subtype reduced from 74% to 65% (T1-T2, n=246), 68%-48% (T1-T3, n =75) and 69%-44% (T1-T4, n=35).
- Parents/guardians saw reduced **hyperactive and impulsive** behaviours in their child after they had taken part in the parent programme. This improvement was sustained and significant across all time points.
- **Social and emotional presentations**, such as externalising emotional problems, difficulties with peers, hyperactivity and conduct problems experienced by the programme child, were all seen to have reduced across all time points by the parent/guardian.
- The results showed a **strong correlation** between changes in the parent/guardians' disciplinary practices and changes in the child's behaviours. Specifically, children of parents/guardians whose disciplinary practices improved showed fewer of the problems and behavioural patterns that are typical for ADHD. The relationship between improved parenting practices and ADHD-consistent behaviour was particularly strong immediately post programme but remained evident for the later follow ups.

Implementation

- Participants in the ADHD IY Parent Programme reported **high levels of satisfaction** (with mean scores of 15.36 out of a possible 16 achieved on the IY Parent Weekly Evaluations). Key factors for parents were the lengthened programme to allow additional time to practise skills and work on problem behaviours as well as the ongoing support they received from the Programme Facilitators and their fellow parent participants.

- **Training, support and fidelity** measures were used to ensure the quality of The Changing Lives Initiative, while some flexibility was still provided to allow programme facilitators to tailor the programme in response to specific presenting needs of families.
- The core components for the **successful partnership** in implementing The Changing Lives Initiative were shared values, shared protocols for delivery, and a shared vision based on a preventative approach. Much time and effort was also put into engaging with local communities and services, and building capacity with local stakeholders.
- **Cross-border success:** Partners used the same programme, practices and protocols across the three jurisdictions. Additionally, the implementation of the Initiative benefited from cross-border training, knowledge sharing and the sharing of expertise and resources.
- Factors that could **potentially inhibit implementation** included practical operational issues, such as differing IT systems, staff working in a statutory partner organisation being called for higher priority work; and the high level of reporting requirements and slow turnaround of payments from the project funder.

Economic

- The **cost per family** completing The Changing Lives Initiative programme across the jurisdictions ranged from €1,155.09 to €1,555.42. For all three jurisdictions costs were commensurate (or lower) than reported elsewhere in the literature.
- No immediate direct cost savings were demonstrated in relation to health and social care costs; an evaluation over a longer period would be required to determine long-term cost saving potential. There is extensive wider evidence, however, of the **long-term cost** effectiveness of this type of early intervention.

Remote Delivery

- Remote delivery of the ADHD IY Parent Programme had **wide acceptability** from both parents and facilitators. The IY programme structure and strategies translated well to remote delivery and provided an otherwise unavailable support network during a stressful and pressured time for families (COVID-19, Lockdown).

4 Context

The section below puts forward information about ADHD and the Incredible Years Parent Training Programme.

4.1 ADHD

ADHD is a chronic and debilitating behavioural disorder which emerges in early childhood and is characterised by maladaptive high levels of inattention, hyperactivity and impulsivity. ADHD is a common reason for referral to mental health services in childhood. For a diagnosis of ADHD to be given, a child's behaviour must exhibit a pervasive pattern of inattention and hyperactivity, excessive restlessness, lack of sustained effort/attention and unusually high levels of movement and acting without thinking, across 3 different settings: home, school and community as demonstrated via interaction specifically with peers. Symptoms must be evident before the age of seven, be present for at least six months and lead to significant impairment (APA, 1994).

In recent times, there has been significant increase in recognition of the disorder and a growing number of children are presenting with ADHD type symptoms and subsequently being formally diagnosed with ADHD (National Institute of Clinical Excellence, 2008). ADHD is a controversial subject and clinical opinion is divided as to its prevalence. Nonetheless it is now generally accepted that internationally ADHD affects up to five percent of all children (Polanczyk, 2007). Although boys are at increased risk of developing the disorder, with male to female ratios ranging from 4:1 to 9:1 there is evidence this divide is narrowing (Walcott, 2015). There is also an increasing number of clinicians who suggest that the condition has been under diagnosed and undertreated (Brent, 2008). In Ireland there is some evidence to support this assertion. In 1997 Hyperkinetic disorder constituted less than five percent of referrals to the Children and Adolescent Mental Health Services (CAMHS), this figure has raised significantly. It is now the case that the most commonly reported primary diagnosis of all children in contact with mental health services in Ireland, is hyperkinetic disorders/problems (including ADHD and other attention disorders). This is evidenced by the fact that in 2018 hyperkinetic disorders constituted 35.7% of cases of all CAMHS referrals (CAMHS Report, 2018).

The Impact of ADHD

ADHD has a pervasive and significant effect on many aspects of a child's life, including family, school and social environments. Along with the core symptoms of hyperactivity, inattention and impulsivity, children with ADHD often present with comorbidities. For example, Oppositional Defiant Disorder (ODD) a condition which is characterised by recurrent negative, defiant, disobedient, and hostile behaviour toward authority figures coexists with ADHD in approximately 50% to 80% of cases (Merikanga et al, 2009). Although it is more common in the combined and hyperactive-impulsive subtypes (Pliszka, 2000). Comorbidity of attention-deficit/hyperactivity disorder amongst adults with a psychiatric disorder such as Clinical Conduct Disorder coexists in as many as one-third of cases (Cumyn 2012). Like ODD, this is most common in the combined and hyperactive-

impulsive subtypes (Wolraich, 2008). Anxiety disorder is present in those with ADHD in approximately 20% to 40% of cases of children (Chung et al 2009). It occurs more frequently in the inattentive subtype (Pliszka, 2000; Wolraich 2008). Anxiety may develop as a secondary disorder in children with ADHD. However, in many cases, anxiety can be a distinct disorder, may be independent and co-exist with ADHD (Levy et al 2005; Lam, 2005). Depression co-exists with ADHD in as many as one-third of cases and may be underpinned by genetic or heritability factors (Merikanga et al, 2009). It appears to be more common in the inattentive and combined subtypes (Wolraich 2008). Children with ADHD and comorbid mood disorders present a troubling clinical population since adolescents with ADHD and mood disorder are at increased risk for attempting suicide (Nasser & Overholser, 1999). Estimates for the coexistence of learning disorders and ADHD are difficult to properly quantify. Some suggest a comorbidity range of 20%-60% (Koolwijk et al, 2014; Larson et al, 2007). In a population-based birth cohort, approximately 40% of children with ADHD also had a reading disability and approximately 60% of children with ADHD also had written-language disorder (Yoshimasu et al, 2010). Learning disabilities appear to occur more commonly among children with the inattentive and combined types of ADHD (Wolraich, 2008). Data regarding the rates of co-existence of specific types of learning disabilities and ADHD are lacking. However, Yoshimasu et al conducted a study conducted in 2010 which involved 445 ninth-grade students and found that children with reading disabilities were twice as likely to meet diagnostic criteria for inattention as the general population (15% versus 7% percent). In a series of meta-analyses Wolraich (2007) found that individuals with ADHD were at higher risk than the general population for reading disability or phonologic awareness deficit (36% versus 17%). ADHD also has a negative impact on children's school engagement. Those identified with ADHD are at increased risk of school resistance, with in-class task refusal and ultimately academic failure. In school, ADHD children display high rates of off-task behaviour, particularly problematic being points of transition and acceptance of school routines, consequently these children can be viewed as being disruptive by both teachers and peers. This collective thinking places the child at an increased risk of social isolation, rejection, and invariably poor social adjustment. Interpersonal difficulties for children with ADHD are commonplace. Indeed, it is difficult to quantify the effect or impact on children with ADHD of deficits in learning capacity, negative teacher and peer influence. However, Walston (2009) suggests that in terms of academic performance these influences could lead to a reduction in school engagement activity and by default performance of some 60%.

The majority of people diagnosed with ADHD in childhood continue to meet criteria for the disorder as adults. In a review of adverse occupational effects of ADHD, it was found that adults with ADHD had higher levels of unemployment compared to control groups (Hechtman, 2016). Even amongst those who managed to sustain employment, those with ADHD experienced greater levels of workplace impairment and reduced productivity and increased absenteeism. They were also more likely to experience workplace trauma, injuries and reduced levels of social engagement within the workplace (Hechtman, 2016). Other problems associated with adult ADHD include increased rates of substance abuse and criminality (Barkley, 2002; Mannuzza, 1998; Weiss, 1986). Additionally, those with ADHD were more than twice as likely to have served prison time and it is estimated that next to anti-social personality disorder (In Ireland it is estimated some 70% of the prison population have

this condition) ADHD is markedly higher amongst this population than the population more generally (Kupper, 2012).

Aside from the personal, family and community costs, the treatment of ADHD places a significant burden on health, broader social and special educational services. For example, the 2010 NICE report on ADHD highlights annual costs in the UK of £66m including £23m for specialist assessment for ADHD, £14m for follow-up care, and a further £29m on prescribed psycho stimulant medication. It is estimated that these costs will increase substantially into the future due to increasing diagnosis and prescribing rates (Brent, 2008; Wolraich, 1998). In Ireland some 55,000 prescriptions for pharmaceutical medications are given out to families according to data extracted from the national pharmacy data base and this figure is likely to grow. Mac Avin (2016) notes that the number children on medication rose from 1913 in 2005 to 4853 in 2015 to 8000 in 2018 whilst Christian Renoux (2016) using clinical practice data base found in Northern Ireland 800% increase in prescribing between 2000 and 2016. A Yearly increase of 14%. It is estimated the total annual cost to the exchequer resulting from the diagnosis and treatment of ADHD in children is some 21 million euro (CAMHS, 2010)

The Aetiology and Treatment of ADHD

The pathogenesis of ADHD is not definitively known, indeed as a full and separate diagnostic classification it was first established in the early nineties. This recent diagnosis reflects and underscores the complexity of the condition and the many factors presumed to play a part in its development. A genetic imbalance of catecholamine metabolism in the cerebral cortex appears to play a primary role, as illustrated by structural and functional brain imaging and the response to drugs with noradrenergic activity, e.g., methylphenidate which acts as both a dopamine and noradrenalin reuptake inhibitor (Makris, 2009; Dutton, 2011). Structural brain imaging in groups of children with and without ADHD also demonstrates significant differences in many areas. Groups of children with ADHD have reversed or absent asymmetry of the caudate nucleus, smaller cerebral and cerebellar volume, smaller corpus callosum regions, and increased grey matter in the posterior temporal and inferior parietal cortices (Castellanos et al, 2003; Makris, 2009). Differences are particularly noted in anterior brain areas, including smaller prefrontal cortical volumes and reduced thickness of the anterior cingulate cortex, as well as cortical thinning in bilateral superior frontal brain regions (Rubia, 1999). Functional brain imaging reveals that groups of children with ADHD have reduced global activation and reduced local activation in the area of the basal ganglia and anterior frontal lobe (Vaidya, 1998; Rubin, 1998). The administration of drugs for ADHD specifically methylphenidate enhances activation in these areas.

A genetic basis of ADHD is also likely as demonstrated by Weiss (2011), family-based case-control studies (Küpper et al, 2012; Cave, 2016), and population-based genetic testing (Biederman et al 1998). There is a remarkably high concordance rate found in twin studies. Indeed, some studies such as those conducted by Weiss, 2011; Neuman, 2001 and Giedd, 2001 have demonstrated concordance rates in monozygotic twins as high as 92% and 33% in dizygotic twins. However, it should be noted that while these concordance rates seem compelling, they do not in themselves demonstrate heritability. While the evidence for a genetic component to the condition would on the surface appear strong, there is an increasing recognition that no single gene is likely to confer the condition. Differing structural abnormalities in the brain of children with ADHD suggest the condition is likely to involve

multiple gene interactions and that an epigenetic basis for the condition may be the primary causal agent (Wolreich, 2016). Epigenetics, by its very nature impels us to examine other causal factors. Epigenetics involves changes in gene function that do not in themselves involve changes in the genes themselves (in other words the neuropeptide core remains intact). Most often this process occurs when changes in a chromosome occur that affect that genes activity and expression, it can also involve heritable phenotypic changes that do not derive from a modification of the genome, such as prions. The relevance of epigenetics from the point of view of most clinicians is that the process opens the door to multiple underlying causal factors for any condition since these changes may be the result of environmental factors, or be part of an individual's particular developmental or environmental circumstance.

Since the classification of this disorder, a variety of environmental agents have been suggested some more plausible than others. However, it is now highly likely, that on the balance of probability some environmental factors may play a potential role in the pathogenesis of ADHD. That said most clinicians would treat this possibility with a degree of caution accepting, that environmental factors may essentially represent but one ingredient in the complex recipe that is ADHD. Indeed, several studies (Dunston 2011; Markris and Barrett, 2007) would suggest that the influence of environmental factors is as yet unproven and should be treated with caution. Despite these caveats, the identification and isolation of possible environmental influences in the genesis of ADHD is a field of growing interest. For example, there are those who argue that dietary influences can play a part in the development and maintenance of the condition. Whilst this idea is controversial it has not limited efforts to establish and prove a connection between the two. Miller (2016) estimates that over half a billion dollars has been spent on studies in this area. Current areas of investigation include the influence of food additives (artificial colours, artificial flavours and preservatives), refined sugar intake, food allergies or intolerance, essential fatty acid deficiencies and Iron and Zinc deficiencies. Whilst attracting considerable media attention the influence of diet on the development of ADHD has proven largely unfounded (Weinstein, 2016). Other environmental influences suggested as a possible contributing factor for the development of ADHD include prenatal medications (particularly prenatal exposure to antidepressants) prenatal exposure to tobacco and alcohol (Braun, 2007; Froehlich et al, 2009; Boyd, 1991; Zwi, 2008) and prematurity and low birth weight as indicated by Kopek (2006), St Sauver (2004) and Boyd (1991). Head trauma in young children is also the subject of increasing investigation and review and given the structural abnormalities mentioned above these investigations are gaining pace (Zwi 2008). This is an area which has received considerable interest in Ireland since figures attending Irish accident and emergency for head injuries has not reduced in some 15 years. (Actually the total number of children attending A&E services generally has not dropped significantly over this period). However, as cited by Fromlich (2008) it is often difficult to determine if the structural abnormalities noted in children with ADHD predate or give rise to the condition itself. This issue is further complicated by the fact that the age of diagnosis for ADHD in most western communities and cultures is currently six years and above. It is also the case that many children experience head injuries which go unnoticed in early infancy and childhood and as a consequence, structural abnormalities in the brain of children with ADHD cannot be definitively said to be a consequence of the condition to a scientifically proven standard (Zwi, 2008). Several psychosocial risk factors have also been identified, including severe socio-economic disadvantage, disrupted and discordant parent-child relationships and harsh or aversive

parenting behaviours, such as critical and negative comments, hostility and negative disciplining (Barbaresi, 2004). Harris (2016) argues that given the lack of clarity around the aetiology of the condition, it is hardly surprising that the numbers are increasing. Poor diagnosis, a tendency towards a medicalised model of mental health and an understandable desire amongst parents to seek a treatable and named condition for their children's difficulties, invariably will lead to increasing numbers being assigned to the condition (Harris, 2016).

4.1.1.1 Treatment of ADHD

Society's approach to the treatment of neurodevelopmental conditions generally has remained unchanged for the last 25 years. We routinely treat mental health conditions with drugs that have proven effective but whose mechanisms of action remains uncertain. Traditionally, pharmacological treatment/management has been the most commonly reported intervention for children with ADHD and it has been estimated that approximately 85% of ADHD children are prescribed psycho stimulants (e.g. methylphenidate, atomoxetine, and dexamphetamine). It is important to note these drugs do not eliminate the condition. They are used to treat their core symptoms and to improve overall functioning and often residual symptoms remain (Visser et al, 2013). Whilst there is good evidence for the short-term efficacy of these treatments (Sideman, 1998) psycho stimulants are not effective for approximately 20%-30% of all those affected with ADHD and there have been growing concerns regarding the potential adverse side-effects of these medications. These drugs have been posited to be responsible for decreased physical growth, insomnia, stomach aches, irritability, and in the long term liver dysfunction. Others argue (Küpper et al, 2012) that whilst the core symptoms of ADHD may be constrained by these drugs (and there is invariably a bounce back effect once the drugs leave the child's system), these interventions do not in themselves reduce behavioural difficulties and peer problems nor do they inculcate child social skills, bring about improvements in emotional regulation, improve family function, parent-child interactions, or parenting skills. This awareness has brought about a shift in treatment paradigm. Currently, both the NICE and WHO guidelines no longer recommended medication as the first-line of intervention for children with ADHD under 5 years. Indeed, these guidelines stipulate that for this age group drug treatment should be reserved for children who suffer with severe ADHD symptoms and for those who have not benefited from other forms of psychosocial treatment (NICE,2018). Consequently, psychosocial interventions are now recommended as the first-line of treatment for children with ADHD and their families (NICE, 2008). These include cognitive behavioural therapies (e.g. child social skills training and parent training), family therapy, school-based programmes and psycho-educational interventions such as information workshops for parents and teachers. Importantly, these interventions place the family and school at the heart of the intervention process and recognise the import of the multi factorial environments of the child.

Parent Programmes

Parenting behaviours and the ability of parents to manage and cope with the symptoms of ADHD play a crucial role in determining whether ADHD is problematic (Pliszka, 2000). Parent-training programmes aim to improve parent-child relationships and provide parents with appropriate skills to manage aversive behaviour and reinforce positive behaviour (Larson et al, 2007). A growing body of research suggests that parent programmes, which are based on behavioural and social learning principles, are likely to result in beneficial

outcomes for both the child and the parent (Lam, 2005). However, while there is some evidence in support of the effectiveness of parent training for children with ADHD, many reviews provide mixed conclusions. For instance, some reviewers argue that parent training helps to improve child compliance, parent-child relationships and parent well-being, but does not produce significant changes in the core symptoms of ADHD. Moreover, parent training is comparatively less effective than pharmacological interventions in tackling the incidence of hyperactivity, inattention and impulsivity (Lam, 2005). It is also the case that even when parent training programmes do bring about reductions in negative child behaviours, sometimes these improvements do not transition into other domains such as the child's school environment or their relationships with their peers in the community. Nevertheless, parent-child relationships are frequently impaired when the child exhibits ADHD and parent training interventions can help to tackle coercive family processes that exacerbate and maintain negative behaviours as well as improving parental and family well-being (Seidman, 2005). A significant body of research links parent behaviours, particularly lax and ineffective discipline and harsh parenting, to the incidence of conduct disorder and oppositional behaviours in impulsive children (Brent, 1988) whilst negative parenting behaviours may also moderate the outcomes of pharmacological treatments (Brent, 1988). More generally, parenting programmes have been found to be highly effective in the treatment of behavioural problems in young children (Seidman, 2005). Given the accumulation of evidence indicating the potential beneficial effects of parent training programmes for children with behavioural problems, perhaps not surprisingly interest has developed regarding their potential use for those families with a child experiencing ADHD.

4.1.1.2 The Incredible Years Basic Parent Training Programme

As with many parenting programmes *The Incredible Years Basic Parent Training Programme* (IYBP; Webster-Stratton, 1989) is a highly formatted manualised programme profoundly influenced and underpinned by both social learning and cognitively based theory. It is a group-based intervention underpinned by the principles of behavioural learning theory. The programme has been extensively evaluated as an intervention for children (3 yrs-7 yrs.) with conduct problems and its effectiveness is now well-established (Shaywitz, 2009). Research also indicates that the IYBP can reduce the incidence of hyperactivity and inattention in children with conduct problems (Mc Gilloway et al 2013; Hutchings et al 2007; Larsson et al 2008). While Hart et al (2013) found that comorbid attention deficits and hyperactivity did not preclude conduct disorder children from deriving benefits from the IYBP. Despite these findings, the effectiveness of the IYBP with ADHD children has received scant research attention. Jones and colleagues (2007; 2008) conducted a Randomized Control Trial (RCT) of the IY programme for parents of children with ADHD and reported long-term positive effects on ADHD symptoms of inattention and hyperactivity, as well as child deviance and parenting behaviour. There have also been a number of other small scale studies (Carlson and Ogg, 2009 (n= three); Walcott, Carlson and Beamon, 2009 (n = four); Lees and Ronan, 2008 (n=four); McGilloway 2011 (n=19) which have also reported significant improvements in child behaviour and parental well-being post IYBP. This, albeit limited data suggests that the IY programme can be an effective intervention for children with ADHD. Indeed, it was these studies which underpin the advice and instructions contained within the current NICE guidelines namely that the programme should be the first intervention for children aged 3-5years with a pattern of symptomology consistent with ADHD. However, the effectiveness of the programme and the research base supporting its

use has largely been developer driven, indeed the majority of the studies cited above included Webster Stratton as an active participant in the evaluation process.

DRAFT

Outcomes Evaluation:
Methodology, Results,
Discussion & Conclusion

DRAFT

5 Outcomes Evaluation

5.1 Introduction: Outcomes Evaluation

This report presents the outcomes from an evaluation which utilised a pre-post methodology to assess a 20 session Incredible Years Parent Training Programme designed to address the needs of parents/guardians whose children demonstrated behaviours consistent ADHD. The report includes context regarding ADHD, its aetiology, prevalence and impact; and a discussion of parent programmes as an intervention for the parent/guardian of a child who has behaviours consistent with ADHD. A methodology and results section are also included as is a discussion of the findings.

5.2 Methodology

In this section the methodological approach is outlined. The research questions which guided the outcomes evaluation are as follows:

Research Questions

- 1) Does the ADHD focused Incredible Years Parent Training Programme lead to an improvement of parenting skills and competencies?
- 2) Does the ADHD focused Incredible Years Parent Training Programme lead to improvements in parent /child functioning?
- 3) Does access and exposure to the ADHD focused Incredible Years Parent Training Programme improve the behaviour of young children (aged 3-7 years) who have behaviours consistent with ADHD?

Participants

Participants in this evaluation study were parents of children aged 3-7 years old, who completed the screening process and met inclusion criteria to access the ADHD IY Parent Programme. Participants came from County Louth and surrounding border region in the Republic of Ireland and Northern Ireland, the greater Belfast and Lisburn area in Northern Ireland and the Argyll & Bute region of West Scotland.

5.2.3 Sampling Method

Parents and caregivers were invited to attend an information and awareness session which introduced The Changing Lives Initiative, discussed ADHD presentation and the content of the ADHD IY Parent Programme. After the information session, parents who felt their children demonstrated behaviours consistent with ADHD were invited to take part in a screening process to assess the suitability of the ADHD IY Parent Programme. This screening process followed directly after information and awareness sessions for parents' convenience and if they were not able to stay and complete screening, programme facilitators arranged a time for them to come to their local project office to complete screening measures there. When predefined criteria for the screening process were met i.e. their child had behaviours consistent with ADHD, parents were offered a place on the next available ADHD IY Parent Programme (usually in the coming weeks). If they did not meet screening criteria to access this programme they were signposted to other services available in the community (often

other programmes delivered within partner organisations were available) or to organisations that could offer advice (e.g. GP, Family Support Hubs etc.)

Inclusion Criteria

Individuals were eligible and invited to participate in the study if they had a child aged from 3 through 7 years of age, who either displayed symptoms consistent with or already had an existing diagnosis of ADHD. Parents also had to confirm that they were willing and able to attend the ADHD IY Parent Programme.

Exclusion criteria

Individuals were excluded from participating in the research study if they were already participating in a similar study or if their child was receiving a pharmacological intervention to treat their ADHD. Participants who did not meet the inclusionary criteria across the three screening tools but who, based on initial screening, had a child requiring alternative intervention or supports were signposted to relevant services.

Measurement Instruments

Measurement instruments employed in the study included:

5.2.3.1 The Strengths and Difficulties Questionnaire (Goodman, 1999).

The SDQ is a mental health screening tool for use with children and adolescents. The instrument provides an outcome measure of psychological adjustment across behavioural and psychosocial domains. The SDQ has 25 items and 5 domains. The domains are: Emotional Symptoms (5 items); Conduct Problems (5 items); Hyperactivity/Inattention (5 items); Peer Relationship Problems (5 items); Pro-Social Behaviour (5 items). A Total Difficulties score is obtained by summing scores across the four deficit-focused scales (i.e. all except the Pro Social Behaviour scale). Respondents are required to indicate their level of agreement with each item on a three-point scale of 'Certainly True', 'Somewhat True' or 'Not True'. Item scores vary from 0-2 depending on the type of endorsement, and the Total Difficulties score ranges from 0-40. The measure takes approximately 5-10 minutes to complete.

5.2.3.2 The Conner's Parent Rating Scale CPRS 3rd Ed., Short Form (Conner's, 2008).

The Conner's Parent Rating Scale 3rd Ed. Short Form is a behavioural/emotional screening instrument for use with children from 3yrs to 18yrs, the instrument is constituted to identify ADHD and other common and/or coexisting conditions. The CPR3 has 45 items and 12 domains. The domains are: General psychopathology; Inattention; Hyperactivity/Impulsivity; Learning Problems; Executive Functioning; Aggression and Defiance and Peer Relations. Unlike the other instruments, Conner's scores are standardised. A standard score allows an individuals' performance on a test to be compared with a reference group, or normative sample. The CPR3 uses T-score standardisation. T-scores are standardised as having a mean score of 50 and a standard deviation of 10 for the reference population. In this research, we followed the convention to regard t-scores smaller than 60 as 'normal'. Approximately 83% of the reference population can be expected to have scores smaller than 60. T scores in the 60-69 range are categorised as elevated and t scores of 70 or larger are considered to be very elevated (Lachar et al, 2005). The expected shares in the population are 14% and 2.5% respectively. Scores of 60-69T reflect the presence of mild problems; scores above 69T reflect problems of a more serious nature. The Conners short form takes approximately 10 minutes to complete.

5.2.3.3 The Vanderbilt ADHD Rating Scale (VADRS) (Wolraich et al.,1998).

The Vanderbilt ADHD Diagnostic Rating Scale (VADRS) is specifically designed for use with an ADHD population. The scale has 47 items organised across 3 domains. The domains are: Inattention; Conduct/Oppositional Problems and Anxiety/depression problems. It also has comorbidity screening scales. The VADRS screens for symptoms of inattention and hyperactivity/impulsivity as specified in the DSM. Since the DSM state that the symptoms of ADHD need to cause impairment the VADRS also includes a screen for performance problems. To meet the DSM V criteria for diagnosis of ADHD, at least 6 out of 8 behaviours must occur often in the inattentive and/or hyperactive sub scales - both of these domains have 9 items and for a diagnosis, the child must exhibit at least one performance problem (rated as 'somewhat of a problem' or 'problematic'). In this study however, the VARS provides for indicative analysis only. The multi-informant version of the VADRS is required for diagnostic purposes. The Vanderbilt parent form takes approximately 5-10 minutes to complete.

5.2.3.4 Parenting Scale (PS) (Arnold et al, 1993).

The PS is designed to identify and explore the presence of dysfunctional disciplinary parenting practices. It has 30 items, 3 domains: Laxness; Over reactivity and Verbosity. The instrument also allows a Total Score to be generated. A higher total score is indicative of less effective disciplinary practices. The PS takes approximately 5-10 minutes to complete.

5.2.3.5 Parenting Stress Index, Short Form (PSI) (Abidin, 1995).

The PSI provides an overall measure of parent stress and the impact of stress on parental functioning. The instrument has 36 items divided into three domains: Parent Distress; Parent Child Dysfunctional Interaction and Difficult Child which combine to form a total stress score. This measure takes 5-10 minutes to complete.

5.3 Study Design

This study was a pre and post evaluation. Due to financial and time constraints it was not feasible to conduct a Randomised Controlled Trial (RCT). The current investigation however, provided an opportunity to assess the feasibility and effectiveness of a parent programme targeting families with children at risk of ADHD, across different implementation contexts. Data were collected at four time points: pre-programme (T1) during the screening process and introductory session on programme; immediately after completion of the parent programme (T2); follow up at 6 months' post programme (T3) and follow up at 1-year post programme (T4). This final time point (T4) a year post programme, was added to the research protocol after data collection at T1 –T3 had been completed for the first two cohorts of participants on the IY programme. These cohorts could be sampled 12 months' post programme within the timeframe of the study (i.e. they completed no later than June/July 2019 and could be followed up no later than June/July 2020).

Procedure

5.3.1.1 Ethics

Ethical approval for the Outcomes Evaluation was obtained through the project's Expert Advisory Group. This group was constituted by professionals with knowledge of ADHD from Academic, Health, Educational and Research institutions.

5.3.1.2 Recruitment

Recruitment to the research study was conducted through the ongoing screening process for the ADHD IY Parent Programme, across all three delivery sites (Louth, Belfast, Argyll & Bute). Each parent/guardian attending the screening process within the timeframe of the study (November 2017 to July 2020) was invited to take part in the research. They were given an information sheet detailing participation in the research and given the opportunity to ask questions. In particular, they were reminded that if they were offered a place on the ADHD IY Parent Programme, it was secure regardless of whether they decided to participate in the research or not, or if they wished to withdraw from the research at a later date. Once satisfied and agreeing to participate in the research study they were asked to give written consent.

Procedure - summary steps

Parents were invited to attend an ADHD Information and Awareness session lasting approximately 60-90 minutes long and facilitated by the programme facilitators or project psychologist. These sessions were promoted by the three delivery teams (Belfast, Louth, Argyll & Bute) to schools, early years' providers, health care workers (e.g. family support hubs, CAMHS teams etc.) and others supporting parents and 3-7 years old children. Sessions were held in community based locations such as nursery and primary schools, community centres or other available spaces in the three programme delivery locales (e.g. local library).

5.3.1.3 Data collection pre-programme (Timepoint 1: Baseline)

The screening process for the project was designed to assess the suitability of the ADHD IY Parent Programme for parents attending (i.e. to assess whether their child had behaviours consistent with ADHD). Screening sessions lasted approximately 30-50 minutes and parents completed three measures (SDQ, Vanderbilt Assessment Scale –parent form; Conners 3rd Ed. Parent short form). During the screening process, parents were invited to participate in the research study and received an information sheet detailing participation as well as a consent form. If parents were not able to attend a group screening session directly after the information and awareness session, facilitators arranged a suitable time for them to complete screening measures in their local project office and they again were invited to participate in the research. Parents who wished to participate in the research were asked to sign consent forms and their completed data from screening measures could then be shared with researchers for Timepoint 1. The screening process was overseen by the project psychologist or programme facilitators. Screening measures were scored by the project psychologist and if inclusion criteria were met on all three measures (suggesting a child had behaviours consistent with ADHD) the parent/guardian was offered a place on a ADHD IY Parent Programme.

Parents who accepted a place on the parent programme and had also agreed to participate in the research completed the additional two parent measures for the research study (PSI and the

PS) during a specially convened group meeting (i.e. week 0) for programme participants prior to the commencement of the first session of the parent programme.

When all measures to be included in the research were completed by those taking part in research, unique participant ID codes were generated to ensure participant anonymity throughout. These codes were used on all hard copies of completed measures instead of names and other personal identifiers, as well as in data files.

5.3.1.4 Data collection Timepoint 2 (Immediately post programme)

When research participants completed their ADHD IY Parent Programme, they were asked to complete the same five measures as they had pre-programme (screening measures: SDQ, Conners, Vanderbilt and PSI, PS) at the final parent programme session. Facilitators and research staff jointly oversaw this process. The three measures used for the initial screening process (SDQ, Conners and Vanderbilt) were scored once more by the project psychologist to provide feedback as part of parent programme participation, and anonymised data from these measures were shared with researchers. Researchers scored the PSI and PS which again, were only completed by parents participating in the research study.

5.3.1.5 Data collection Timepoint 3 (6 month's post programme)

When research participants had reached 6-months' post programme, researchers with the help of programme facilitators, contacted them, inviting them to complete all five programme measures for their program child once more at a specially convened session at this time. When they were not able to attend this session measures were posted to them with stamped addressed envelopes for returning when completed. Researchers completed scoring of all five measures for this time point.

5.3.1.6 Data Collection Timepoint 4 (1-year post programme)

Participants who completed the parent programme in the first two rounds of delivery across two sites –Belfast and Louth (i.e. they had completed the programme 12 months before being contacted and no later than the research data inclusion cut off of July 2020) were invited to once again complete all five parent measures. Data collection was completed at this time point again through a combination of group sessions and via postal mailing of measures. Researchers completed scoring on all five measures for this time point too.

5.4 Sample Description and Attrition

814 parent/guardians engaged in a screening process to establish if their child had behaviours consistent with ADHD. 543 of these people screened positively and were invited to take part in the parent programme. 80% of the invited parent/guardians provided informed consent to take part in the research (see Table 1).

337 parent/guardians took part in the baseline measurement (T1- pre-programme time point). 75% of these took part in the post-programme (T2- immediately after programme completion) research. Participant numbers declined at the 6 month follow up (24% of the original sample) and participants who were 12 months' post programme (i.e. first two cohorts completing programme, from across two delivery sites – Belfast and Louth) and who had completed data at all three previous time points (T1, T2, T3) were sampled for an additional

time point (T4) 11% of the original baseline sample. (See Table 2). Analysis of the attrition population was conducted. No single indicator for selective attrition was found. Population Demographics difference did not predict attrition. Frequency and intensity of symptoms did not predict Attrition. Average scores on the measures applied at T1 did not significantly differ between parent/guardians that continued in the research and parent/guardians who discontinued with the research.

Table 1 Sample Information

Screened	Offer	Research Consent
814	543	447

Table 2 Participant Numbers

Participant Numbers	Timepoint 1 (pre-programme Baseline)	Timepoint 2 (post programme)	Timepoint 3 (6-months post programme)	Timepoint 4 (1 year post programme)
	337 (100%)	253 (75.0%)	82(24.3%)	38(11.3%)

Valid Responses per Measure

Table 3-7 shows the gender breakdown per measure regarding the program child. The total numbers differ between measures and are smaller than the number of parent/guardians who took part in the different stages of the research (see Table 2). This reflects the fact that some questionnaires were not completed by the parent/guardians or that the answers could not be processed or scores accorded due to missing item responses.

Table 3 Parenting Scale Gender Breakdown (Gender of Child)

Measure	Total	Male	Female	Gender Unknown
Parenting Scale T1	269	191	67	11
Parenting Scale T2	200	143	49	8
Parenting Scale T3	81	57	16	8
Parenting Scale T4	36	28	7	1

Table 4 Parenting Stress Index Gender Breakdown (Gender of Child)

Measure	Total	Male	Female	Gender Unknown
Parenting Stress Index T1	269	191	68	10
Parenting Stress Index T2	198	142	48	8
Parenting Stress Index T3	79	55	16	8
Parenting Stress Index T4	36	28	7	1

Table 5 Strengths' and Difficulties Questionnaire (SDQ) Gender Breakdown (Gender of Child)

Measure	Total	Male	Female	Gender Unknown
SDQ T1	804*	478	158	168
SDQ T2	245	155	53	37
SDQ T3	78	54	16	8
SDQ T4	36	28	7	1

* This includes the children of parent/guardians who took part in screening but did not go to take part in the parent programme.

Table 6 Vanderbilt Gender Breakdown (Gender of Child)

Measure	Total	Male	Female	Gender Unknown
Vanderbilt T1	811*	482	159	170
Vanderbilt T2	247	155	54	38
Vanderbilt T3	75	52	16	7
Vanderbilt T4	36	28	7	1

* This includes the children of parent/guardians who took part in screening but did not go to take part in the parent programme.

Table 7 Conners Gender Breakdown (Gender of Child)

Measure	Total	Male	Female	Gender Unknown
Conners T1	807*	480	157	170
Conners T2	244	154	54	36
Conners T3	79	55	16	8
Conners T4	36	28	7	1

* This includes the children of parent/guardians who took part in screening but did not go to take part in the parent programme.

Analysis

For the PS, PSI, SDQ, and Conner's the mean scores of the participants taking part in the pre-programme baseline (T1) and follow up data points (T2, T3, T4) have been compared and pairwise T-tests conducted to establish whether mean scores differ to a point of statistical significance at baseline and follow up. Following general convention, a significance level of $p < .05$ has been chosen to evaluate the results.

For the Vanderbilt identification of the Predominantly Inattention subtype and the Predominantly Hyperactivity/Impulsive subtype, the proportions of positively identified children were compared between baseline and each follow up data point. A test for equality of proportion using a significance level of $p < .05$ has been applied to these measures.

To assess whether the proximate effects of the programme (changes regarding parental stress and level of parenting skills, disciplinary practices) and the more distal effects (child behavioural problems) are related, we examined the extent of correlation between positive parental change with changes in child outcomes. For this, we calculated Pearson's correlations of the change scores between baseline and subsequent measurement points. Change scores are the differences between the score at baseline and the scores at a later measurement point. For the Vanderbilt categorisations, we performed a logistic regression of improved cases (cases who scored as positive in the baseline and as negative at a later measurement point) on the change scores of the parenting measures. Again, significance level of $p < .05$ were applied to evaluate the results.

5.5 Results

The results are presented on an instrument by instrument basis. An assessment indicating levels of correlations between the SDQ and the Parenting Scale and also the Conner's and the Parenting Scale are also provided.

5.5.1 Parenting Scale (PS)

Arnolds (1993) PS was designed to measure dysfunctional discipline practices in parents with young children. The scale identifies three stable factors of dysfunctional discipline style: (1) Laxness, (2) Over reactivity, and (3) Verbosity.

Laxness (PS)

This domain taps into whether or not the parent/guardian sets limits or enforces rules, rewards misbehaviour with positive consequences, and gives into coercive behaviour. This domain also explores if the parent is permissive for example if they tend to avoid exercising appropriate control.

Table 8 Laxness

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	184	3.39	2.52	10.9/183	<.05
T1-T3	79	3.40	2.47	7/78	<.05
T1-T4	35	3.48	2.36	4.9/34	<.05

Table 8 shows the results for the Laxness domain of the PS. The mean scores for the Laxness domain significantly improved across all post-programme time points (T2, T3, T4). Pre-programme scoring was elevated indicating abnormal behaviour and interaction between parent and child within this domain. The scoring indicated parental reaction to the incidence of inappropriate or dysregulated behaviour by their children was inconsistent, inappropriate and permissive. Limit setting and behavioural parameters for children were neither set nor enforced. Post programme and across data time points, reported behaviour across this domain scored within the normative range indicating that parents/guardians were no longer lax in their approach to discipline; were more likely to have established appropriate rules; were more consistent in the application of these rules and more likely to follow through with disciplining their child when rules were broken.

Over reactivity (PS)

This domain assesses whether the parent/guardian responds to misbehaviour with anger, meanness, irritation, or frustration, and if the parent/guardian is likely to assert their power through threats and physical punishment.

Table 9 Over reactivity

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	184	3.39	2.28	14.3/183	<.05
T1-T3	79	3.29	2.36	6.7/78	<.05
T1-T4	35	3.25	2.25	4.7/34	<.05

Table 9 shows the results for the ‘Over reactivity’ domain in the PS. The mean scores of this domain significantly improved from pre programme to post programme (T1-T2; T1-T3; T1-T4). Pre-programme (T1) parent over reactivity to child misbehaviour was ‘clinically elevated’ but was shown to be normative at post programme time points (T2, T3, T4). Parents/guardians reported they were less likely to overreact when their child misbehaved post parent programme and were less likely to respond with anger and/or meanness when faced with disciplinary infractions. These changes were statistically significant.

Verbosity (PS)

This domain examines the extent to which the parent/guardian engages in lengthy verbal responses to misbehaviour such as over talking and/or over explaining the reason or need to discipline their child. Elevated scores in this domain indicate a parental environment where critical commentary and exchange predominate. This pattern of interaction is also characterised by a lack of praise and positive verbal reinforcement.

Table 10 Verbosity

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	184	4.24	3.18	12.2/183	<.05
T1-T3	79	4.33	3.31	7.7/78	<.05
T1-T4	35	4.42	3.26	5.6/34	<.05

Table 10 shows the results for the Verbosity domain of the PS. The mean scores of the verbosity domain significantly improved from pre to post programme and across follow up time points (T1-T2; T1-T3; T1-T4). Pre programme scores in this domain exceeded the clinical cut off point, indicating a pattern of interaction which was harsh, critical and dismissive in tone and form. A normative pattern of interaction was found post parent programme. Parents/guardians reported that they were less likely to over talk and over

explain when their child misbehaved and more likely to respond positively when their child behaved appropriately. These changes were statistically significant.

Total Score (PS)

This domain provides an overall picture of the parent/guardians disciplinary practices. The Total Score also assesses if their discipline practices are dysfunctional or not.

Table 11 Total Score

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	184	3.63	2.66	16.5/183	<.05
T1-T3	79	3.59	2.71	8.9/78	<.05
T1-T4	35	3.64	2.61	6.6/34	<.05

Table 11 shows the results for the Total Score domain (PS). The mean scores of the Total Score domain significantly improved from pre to post programme, across all follow up time points (T2, T3, T4) and moved from above the clinical cut off point at T1 (i.e. score 3.2 or above) to normative levels of engagement. Results suggest parents/guardians considered their disciplinary practices improved and disciplinary practices were less likely to be dysfunctional after taking part in the parent programme.

Figure 1 Total Score Parenting Scale

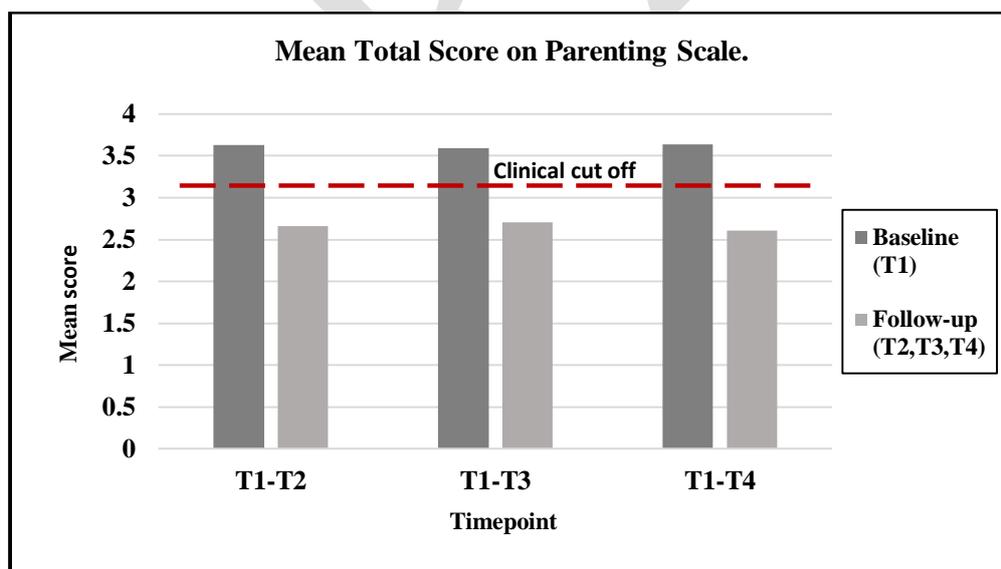


Figure 1 illustrates the change in mean scores for the Total Score domain of the PS from pre-programme (T1) to post-programme follow up time points (T2- immediately post programme; T3- 6 months' post programme; T4- 1-year post programme). This change to disciplinary practices was statistically significant. Parents/guardians' reported a positive

change in relation to dysfunctional disciplinary practices. Specifically, they reported being less likely to avoid intervention when their child misbehaved (laxness) and less likely to overreact when the child acted out. Parents also indicated a greater inclination to keep their response brief and focused and to avoid negotiation, discussion or argument when their child misbehaved.

5.5.2 Parenting Stress Index (PSI)

The results from the PSI are presented below. This instrument provides an assessment of three domains, ‘Parental Distress’, ‘Parent Child Dysfunctional Interaction’ and ‘Difficult Child’. The instrument also allows a Total Stress Score to be established.

Parental Distress (PSI)

This domain reflects the parent/guardians perception of their child rearing competencies and if there is conflict with their spouse/partner in relation to their role as parent. This domain also reflects levels of social support and stress associated with any restrictions placed on the parent/ guardians other life roles.

Table 12 Parental Distress

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	184	35.75	29.04	9.7/183	<.05
T1-T3	78	35.19	28.00	7.5/77	<.05
T1-T4	36	33.93	24.22	5.2/35	<.05

Table 12 shows the results for the Parental Distress domain (PSI). The mean scores in this domain significantly improved from pre to post programme time points (T1-T2, T1-T3, T1-T4) and went from ‘elevated’ levels to normative levels. These changes were statistically significant. Parents/guardians reported reduced stress levels connected with being a parent and expressed greater competence and confidence in their role as a parent after completing the parent programme.

Parent Child Dysfunctional Interaction (PCDI) (PSI)

This domain explores the parent/guardians’ perception of their child not meeting their expectations and that their interactions with their child are not positively reinforcing to them as a parent/guardian. Parents/guardians scoring in the problematic range in this domain may project the feeling that the child is a negative element in their life. High scores in this domain suggest that parent bond is either threatened or has never adequately established.

Table 13 Parent Child Dysfunctional Interaction

Comparison	No Observations	Mean Score	Mean Score	Tvalue/df	Significance
		Baseline	Follow-up		
T1-T2	183	30.01	25.27	8.7/182	<.05
T1-T3	77	29.38	24.54	5.7/76	<.05
T1-T4	35	29.72	23.94	4.2/34	<.05

Table 13 shows the results from the Parent Child Dysfunctional Interaction (PCDI) domain of PSI. The mean scores of the PCDI domain significantly improved from pre to post programme, across all time points (T2, T3, T4). Across the cohort whilst scores did not reach the clinical cut off point for this measure, the pattern of scoring was highly elevated indicating a fractious relationship existed between parent and child. Mean score had moved to normative levels at time point 2 (immediately post programme) and there was consistent improvement thereafter across time point 3 (6-months' post programme) and time point 4 (1-year post programme). These results were statistically significant. Results indicated that parents/guardians saw their child as being less difficult post programme. They also had a more positive perception of their child meeting their expectations. This suggests a better understanding of their child and their role as parent/guardian post programme as well as engagement at normative levels and improving over time.

Difficult Child (PSI)

The focus of this domain is on some basic behavioural characteristics of the program child that makes them either easy or difficult to manage. These behavioural characteristics are often rooted in the child's temperament and may include learned patterns of defiant, non-compliant and demanding behaviours. Parents/guardians who score highly here are typically experiencing difficulty in managing their child's behaviour; struggle setting limits, and with gaining the child's cooperation.

Table 14 Difficult Child

Comparison	No Observations	Mean Score	Mean Score	Tvalue/df	Significance
		Baseline	Follow-up		
T1-T2	184	35.71	36.35	-1.9/183	>.05
T1-T3	78	35.93	36.49	-0.9/77	>.05
T1-T4	36	36.17	38.78	-2.6/35	<.05

Table 14 shows the results for the Difficult Child domain of the PSI. The results for this domain show that mean scores did not improve at T1-T2, T1-T3 or T1-T4, suggesting that parents/guardians continued to experience some difficulties in managing their child's behaviour post programme.

Total Stress Score (PSI)

The Total Stress Score indicates the overall level of stress experienced by the parent/guardian as a parent. It reflects stress reported in the areas of Personal Parental Distress, Stresses Derived from their Interaction with their Child, and also stress that resulted from the child's behavioural characteristics.

Table 15 Total Stress Score

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	181	101.45	90.56	9.7/180	<.05
T1-T3	77	100.5	89.01	6.6/76	<.05
T1-T4	35	99.81	87.26	4.45/34	<.05

Table 15 shows the results for the Total Stress Score of the PSI. The mean scores show that overall stress levels experienced by parents/guardians reduced from above the clinical cut off point (i.e. score of 90) pre programme (T1) to normative levels post programme (T2, T3, T4). This change was statistically significant across all post programme time points. The pattern of scoring across this measure indicates that whilst parents viewed some aspects of their child's behaviour as problematic, they believed it was manageable and it no longer engendered the same level of concern as it did before completing the parent programme.

Figure 2 Total Stress Score Parenting Stress Index (PSI)

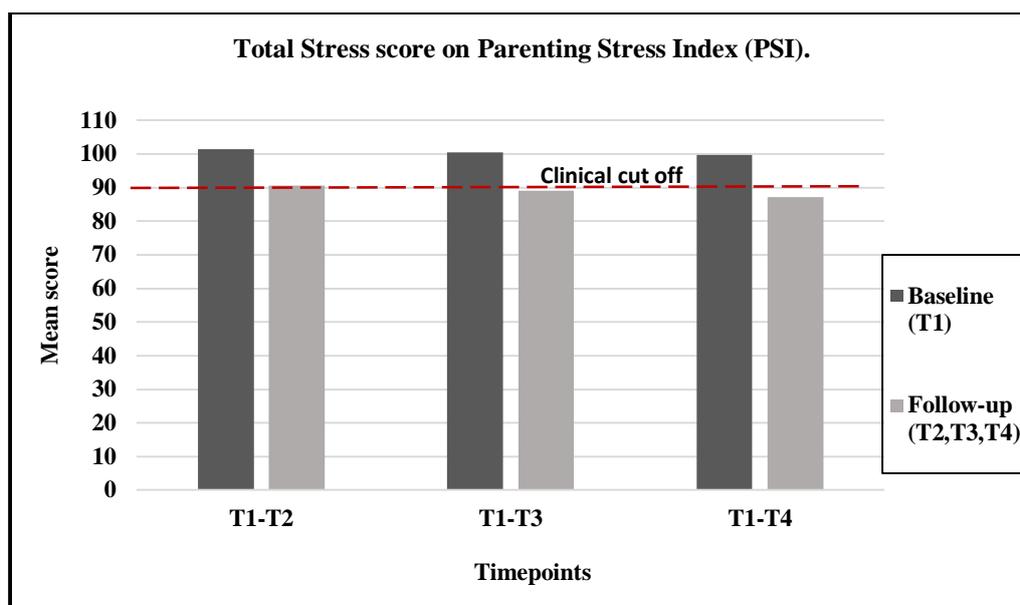


Figure 2 illustrates the Total Stress Score (PSI) reported by the parent/guardian from pre-programme (T1) to all post programme time points (T2- immediately post programme; T3- 6 months' post programme; T4-1-year post programme). Mean score pre programme was above the clinical cut off (a score of 90 or above) but showed a gradual decrease across post programme time points (T2, T3, T4).

5.5.3 Strengths and Difficulty Questionnaire (SDQ)

The Strengths and Difficulties Questionnaire (SDQ) examines parental perception of children's behaviour over five domains: Emotional problems, Conduct problems, Hyperactivity, Prosocial Skills and Peer Problems. Total Problem Score can also be produced.

Emotional Problems (SDQ)

This domain measures emotional symptoms such as being fearful, having difficulty controlling worries, being clingy, becoming easily frightened, crying easily and having ones' feelings easily hurt. It also assesses the presence of related physical symptoms such as aches/pains and experiencing sleep difficulties.

Table 16 Emotional Problems (SDQ)

Comparison	No Observations	Mean Score	Mean Score	Tvalue/df	Significance
		Baseline	Follow-up		
T1-T2	245	4.64	3.77	5.4/244	<.05
T1-T3	78	4.62	3.86	2.2/77	<.05
T1-T4	36	5.17	3.58	4/35	<0.5

Table 16 shows the results for the Emotional Problems domain (SDQ). The mean score at pre-programme (T1) was categorised as ‘high to very high’ (4 band categories in SDQ scoring) which indicated parents reported problems in child’s ability to regulate their emotions. However post programme scores decreased to within ‘high to slightly raised’ categories at all three follow up time points (T2, T3, T4) and this change was statistically significant.

Conduct Problems (SDQ)

This domain of the SDQ assesses the presence or not of aggression and related behaviours such as – cruelty, destruction of property, deceitfulness, theft and/or serious rule-breaking behaviours.

Table 17 Conduct Problems

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	245	6.41	4.69	11.9/244	<.05
T1-T3	78	6.44	4.60	5.9/77	<.05
T1-T4	36	6.72	3.42	9/35	<.05

Table 17 shows the results for the Conduct Problems domain of the SDQ. The mean scores for this domain showed sustained and significant improvements from pre-programme (T1) to post programme time points (T2, T3, T4) such as a reduction in rule breaking and aggressive behaviour. Mean scores suggested that children’s reported conduct problems moved from ‘very high’ before the programme (T1) to ‘slightly raised’ post programme and close to normal by the final follow up time point, 1-year post programme (T4).

Hyperactivity (SDQ)

The Hyperactivity domain of the SDQ taps into high activity levels, restlessness, impulsiveness, having difficulty being quiet, interrupting others and becoming easily excited.

Table 18 Hyperactivity

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	245	8.78	7.75	8./244	<.05
T1-T3	78	8.65	7.59	3.9/77	<.05
T1-T4	36	8.39	7.19	3/35	<.05

Table 18 shows results for the Hyperactivity domain of the SDQ. Means scores across all post programme time points showed significant and sustained improvements in hyperactivity, with parents/guardians reporting decreases in their child’s restlessness, impulsiveness and excitability post programme. Mean scores in this domain were rated ‘very high’ pre-programme (T1) but gradually decreased to ‘high’ over the duration of the evaluation (4 band categorisation in SDQ).

Figure 3 Mean Hyperactivity domain Score (SDQ)

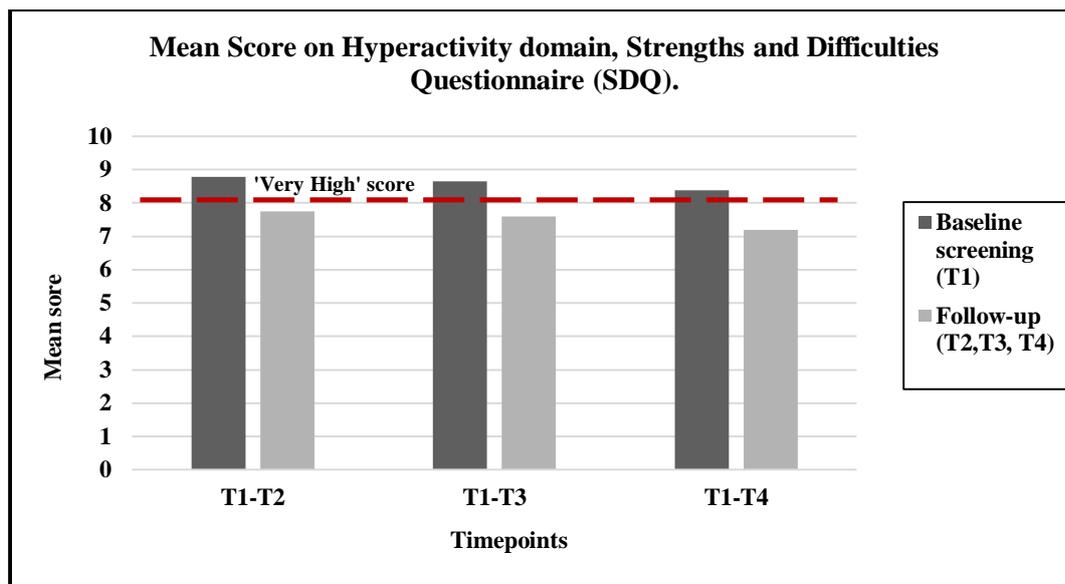


Figure 3 illustrates the mean score on the Hyperactivity domain of the SDQ for pre-programme (T1) and follow up time points post programme (T2- immediately after programme; T3- 6 months after end of programme; T4- 1 year after the end of programme). Pre-programme mean score was categorised as ‘very high’ (score 8-10) but showed a steady decrease across post programme follow up time points, although was classed as ‘high’ (SDQ) indicating ongoing issues with hyperactivity related behaviours.

Prosocial (SDQ)

The Prosocial domain explores voluntary and positive behaviours exhibited by the child such as helping, sharing, and co-operating.

Table 19 Prosocial

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	245	5.63	6.84	-9/244	<.05
T1-T3	78	5.49	6.85	-4/77	<.05
T1-T4	36	5.5	7.53	-4.09/35	<.05

Table 19 shows the mean scores for the Prosocial domain of the SDQ. Scores indicate that parents/guardians reported an increase in their child's behaviours such as being more cooperative. These results were statistically significant at all post programme time points (T2, T3, T4). Mean Scores increased from 'low' at pre-programme time point (T1) to 'slightly raised' (T2, T3) and then 'close to average' by the final follow up time point (T4- 1-year post programme).

Peer Problems (SDQ)

The Peer Problems domain of the SDQ assesses if a child has difficulty with friendships, has poor social skills and/or seems to be unaccepted by their peer group.

Table 20 Peer Problems

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	245	3.64	3.1	4.3/244	<.05
T1-T3	78	3.60	3.21	1.2/77	>.05
T1-T4	36	3.64	3.47	0.5/35	>.05

Table 20 shows the results for the Peer Problems domain of SDQ. Mean scores on this domain decreased from pre-programme (T1) to post programme (T2, T3, T4) but was statistically significant only from pre-programme to immediately post programme (T1-T2). While parents/guardians reported improvements in their child's social skills and fewer difficulties with their peers, mean scores remained within the 'slightly raised' category (SDQ) across all time points, both pre and post programme.

Total Difficulties (SDQ)

The Total Difficulties score for the SDQ is obtained by summing scores across the four deficit-focused scales: Emotional Symptoms, Conduct Problems, Hyperactivity/inattention and Peer Relationship Problems. The Total Difficulties score provides an overall picture of the social and emotional issue's faced by the program child.

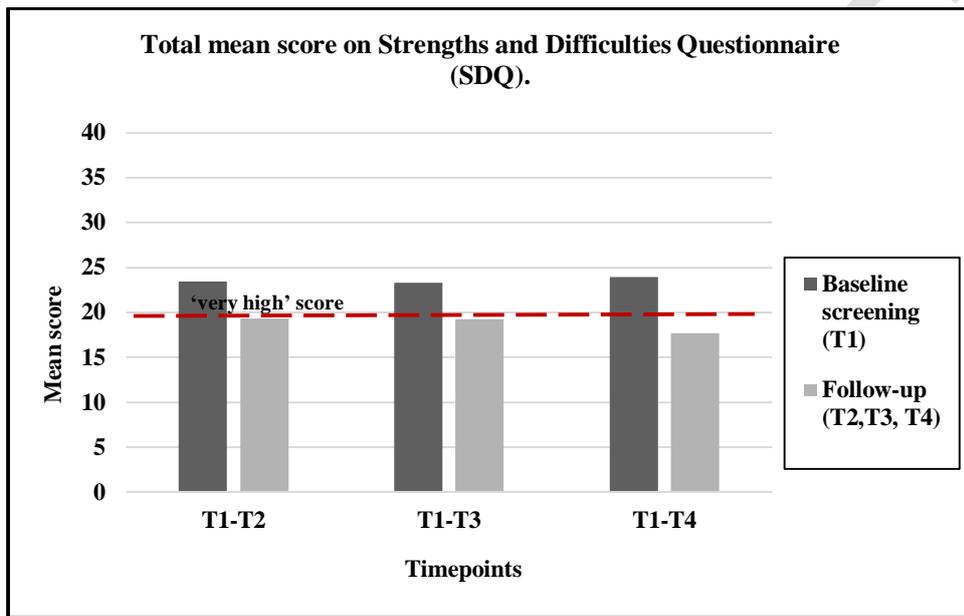
Table 21 Total Difficulties

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	245	23.46	19.31	10.7/244	<.05
T1-T3	78	23.31	19.23	4.9/77	<.05

T1-T4	36	23.92	17.67	6.8/35	<.05
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Table 21 shows the Total Difficulties (SDQ) mean scores across all time points. Results indicated a reduction in reported social and emotional difficulties for program children from pre-programme (T1) to post programme time points (T2,T3,T4). These changes were also statistically significant but scores pre (T1) and post programme (T2, T3) remained within the ‘very high’ category of SDQ scoring (score 19 or greater is categorised as ‘very high’) and ‘high’ by the final follow up time point (T4).

Figure 4 Total Difficulties (SDQ)



Total Difficulties

Figure 4 illustrates the mean score for ‘Total Difficulties’ on the SDQ. Mean score pre-programme (T1) was defined as ‘very high’ (using the 4 band categorisation of SDQ scoring). While mean score was still categorised as ‘very high’ at T2 (immediately after programme ended) and T3 (6 months’ post programme) it decreased to ‘high’ by the final follow up (T4) 1-year post programme.

5.5.4 Vanderbilt (VADRS)

The Vanderbilt is specifically designed for use with an ADHD population. The scale has 47 items organised across three domains. The domains are: Inattention; Conduct/Oppositional Problems and Anxiety/Depression problems. It also includes comorbidity screening scales. The scale has been extensively used to diagnose hyperkinetic symptoms in children aged 3-7 years.

ADHD Predominantly Inattentive subtype (Vanderbilt)

This domain reports if the child has poor concentration and attention, difficulty keeping their mind on work; if they make careless mistakes and if they are easily distracted. It also explores if the child gives up easily and/or becomes easily bored.

Table 22 ADHD Predominantly Inattentive Subtype

Comparison	No Observations	Percentage Positive Baseline	Percentage Positive Follow-up	Zvalue	Significance
T1-T2	246	74	65	2.2	<.05
T1-T3	75	68	48	2.5	<.05
T1-T4	35	69	44	2.1	<.05

Table 22 shows the results for 'Predominantly Inattentive' subtype on the Vanderbilt. Results indicated a statistically significant decrease in the percentage of the sample scoring positive for Predominantly Inattentive subtype of ADHD, from pre-programme (T1) to post programme, across all time points (T2, T3, T4). This result suggests a reduction in behaviours such as inattention and being easily distracted in program children, after parents'/guardians participated in the parent programme.

Figure 5 ADHD 'Predominantly Inattentive' Subtype (Vanderbilt)

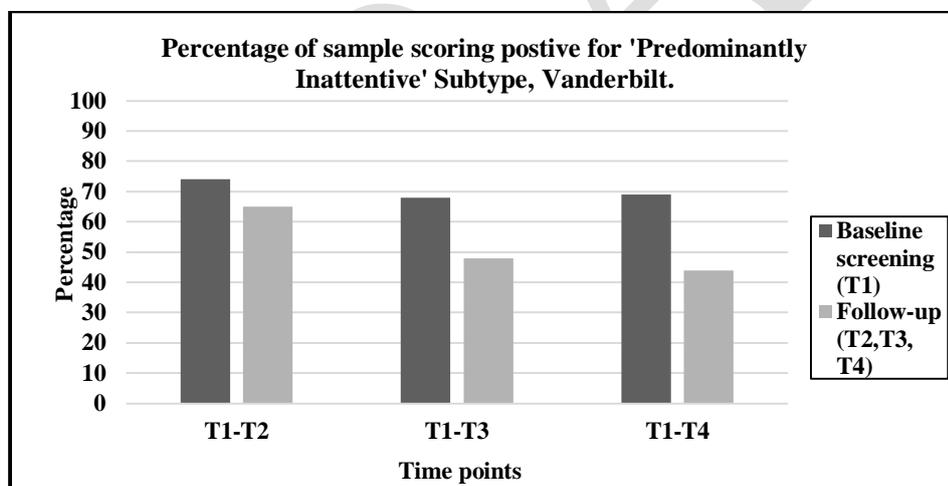


Figure 5 illustrates the results for the ADHD Predominantly Inattentive subtype (Vanderbilt). The percentage of children scoring positive for Inattentive Subtype ADHD decreased from 74% pre-programme to 65% immediately post programme (T1-T2); 68% to 48% (T1 to T3 – 6 months after completing the programme) and 69% to 44% by T4 (1-year post programme).

ADHD Predominantly Hyperactive/Impulsive Subtype (Vanderbilt)

The Hyperactive/Impulsive subtype of the Vanderbilt assesses whether a child has high activity levels; if they are restless; if a child is impulsive and if they have difficulty being quiet. Additionally, the ADHD Predominantly Hyperactive/Impulsive subtype reports if the child interrupts others and becomes easily excited.

Table 23 ADHD Predominantly Hyperactive/Impulsive Subtype

Comparison	No Observations	Percentage Positive Baseline	Percentage Positive Follow-up	Zvalue	Significance
T1-T2	246	74	39	7.8	<.05
T1-T3	75	65	53	1.5	>.05
T1-T4	36	64	39	2.1	<.05

Table 23 shows the results for the Predominantly Hyperactive/Impulsive subtype (Vanderbilt). There was a decrease in the percentage of the sample scoring positive for this subtype of ADHD, from pre-programme (T1) to immediately post programme (T2); 6 months' post programme and 1-year post programme (T4), although this decrease from pre to post programme was statistically significant only for T1-T2 and T1-T4 it indicates a change to reported behaviours related to hyperactivity/impulsiveness in program children.

Figure 6 ADHD Predominantly 'Hyperactive/Impulsive' Subtype (Vanderbilt)

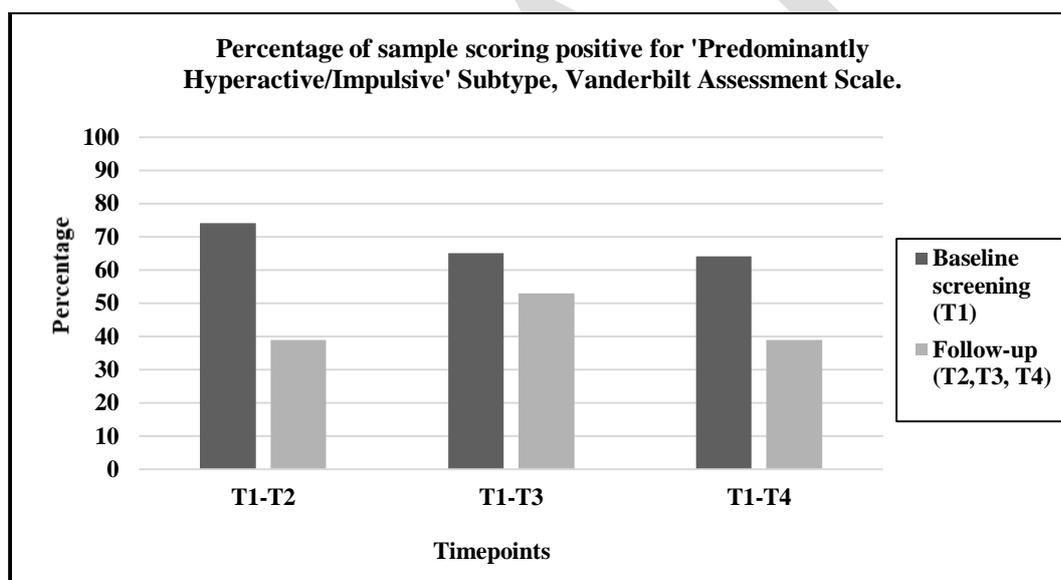


Figure 6 illustrates the percentage of program children scoring positive for 'Predominantly Hyperactive/Impulsive' subtype (Vanderbilt). The percentage scoring positive for this subtype decreased from pre programme (T1) to all three follow up post programme time points (T2- immediately post programme; T3-6 months post programme; T4- 1-year post programme). Results were statistically significant.

5.5.5 Conner's 3rd Edition, Parent Report Short Form

This scale compiles scores across the following dimensions: Inattention; Hyperactivity/Impulsivity; Learning Problems; Executive Functioning; Defiance/Aggression.

Inattention subscale (Conners)

This subscale assesses if the child has poor concentration, difficulty paying attention and/or if they struggle keeping their mind on work. The Inattention subscale also explores if the child makes careless mistakes, is easily distracted, gives up easily, if they become easily bored and if relevant to their age, if they avoid schoolwork.

Table 24 Inattention Subscale

Comparison	No Observations	Mean Score	Mean Score	Tvalue/df	Significance
		Baseline	Follow-up		
T1-T2	244	85.33	78.90	9.2/243	<.05
T1-T3	79	84.82	79.18	3.8/78	<.05
T1-T4	36	85.14	74.83	4.9/35	<.05

Table 24 shows the results for the Inattention subscale (Conners). Overall results, both pre-programme (T1) and post-programme (T2,T3,T4) remained ‘elevated’ (Conners) however post-programme scoring indicated improvements in children’s ability to better manage their attention, distractibility and boredom. These changes were reported by parents/guardians across all post-programme time points and were statistically significant.

Figure 7 Inattentive Subscale, Conners 3rd Edition, Short Form

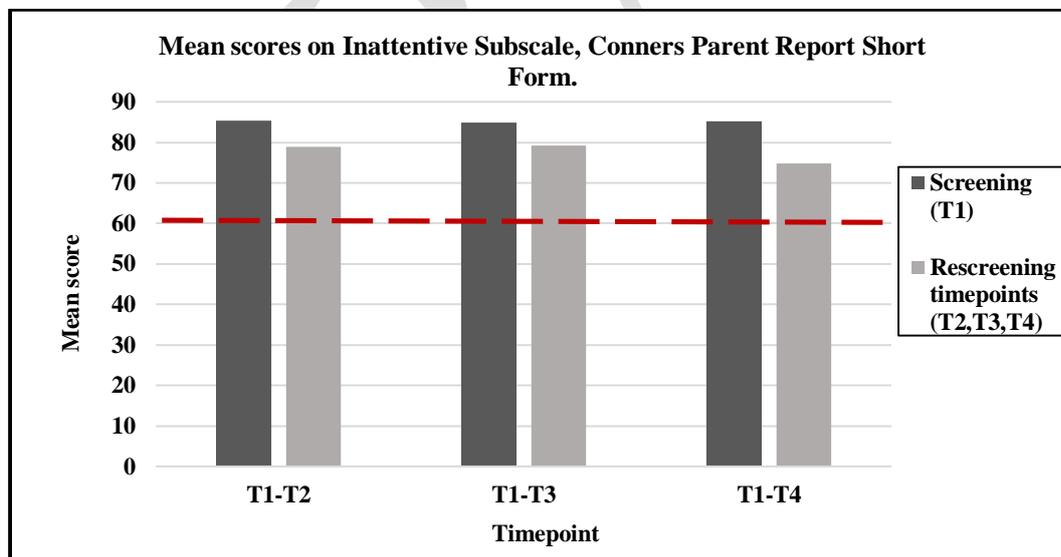


Figure 7 illustrates changes to mean scores on the Inattention subscale (Conners) for those sampled at pre-programme (T1) and then immediately post-programme (T2), 6 months’ post programme (T3) and 1-year post programme (T4). Mean scores decreased from pre to post programme, across follow up time points (T2, T3, T4), although still remained within the ‘elevated’ range (Conners). A score of 60 or above is defined as ‘elevated’ in the Conners

form, with a score of 60-69 indicating the presence of mild problems and scores of 70 or above indicating problems of a more serious nature.

Hyperactivity/Impulsivity Subscale (Conners)

The Hyperactive/Impulsivity subscale of Conners assesses if a child is restless and/or impulsive and if they have high levels of activity. This subscale also assesses if a child has difficulty being quiet, if they interrupt others and if they become easily excited.

Table 25 Hyperactivity/ Impulsivity Subscale

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	243	86.57	81.80	8.2/242	<.05
T1-T3	79	86.68	80.61	4.9/78	<.05
T1-T4	36	87.36	77.72	5.4/35	<.05

Table 25 shows the results for the Hyperactivity/Impulsivity Subscale (Conners). Mean scores were ‘very elevated’ (score over 70) pre-programme and remained so at all post-programme time points despite consistently decreasing by each follow up time point (T2, T3, T4). Despite scores remaining ‘very elevated’ post programme, results were statistically significant and indicated parent/guardian reporting positive changes to their child’s hyperactive and impulsive behaviour

Figure 8 Hyperactivity/Impulsivity subscale (Conners)

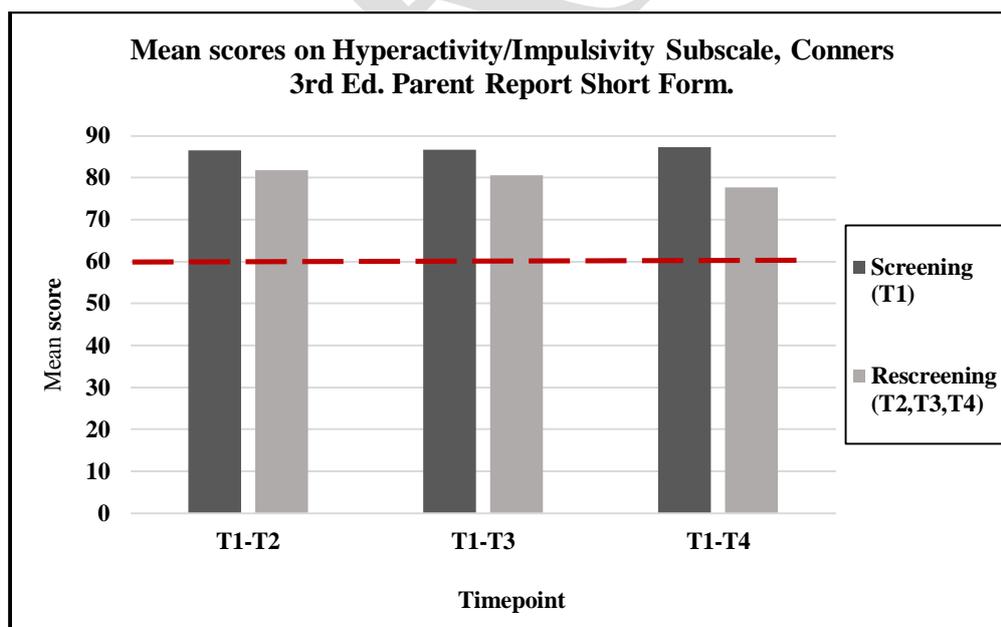


Figure 8 illustrates changes to mean scores on the Hyperactive/Impulsivity subscale (Conners) for those sampled at pre-programme (T1) and again at post programme follow up

time points T2 (immediately after programme ended), T3 (6 months' post programme) and T4 (1-year post programme). Scores decreased from pre to post programme but remained very elevated. A score of 60 or above is defined as 'elevated' on the Conners parent form, with scores of 60-69 indicating the presence of mild problems and scores of 70 or above indicating problems of a more serious nature.

Learning Problems Subscale (Conners)

This subscale assesses if a child struggles with learning, remembering concepts; if they need extra instructions and if they have difficulties reading, spelling, and with mathematics.

Table 26 Learning Problems Subscale

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	245	62.90	60.48	3.1/244	<.05
T1-T3	78	60.99	59.91	0.8/77	>.05
T1-T4	35	62.14	60.03	0.8/34	>.05

Table 26 shows the results from the Learning Problems Subscale of Conners. Overall results pre and post programme remained at 'High Average' (i.e. score between 60-69, Conners). However post-programme scores indicated significant improvements with parents/guardians reporting their child had fewer difficulties with learning problems post programme. These improvements were recorded across all follow up time points (T2, T3, T4) and the change was statistically significant at T1-T2, but not at T1-T3 or at T1-T4.

Executive Functioning Subscale (Conners)

This subscale assesses if a child has difficulty starting or finishing projects; if they tend to complete projects at the last minute; if they have poor planning and organisational skills, and if they have difficulty prioritising tasks.

Table 27 Executive Functioning Subscale

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	244	73.39	67.67	6.5/243	<.05
T1-T3	79	72.35	67.23	3.5/78	<.05
T1-T4	36	73.39	65.58	3.0/35	<.05

Table 27 shows the results for the Executive Functioning Subscale of Conners parent form. Overall results indicated a decrease in score from ‘very elevated’ (i.e. score over 70) at pre-programme (T1) to ‘elevated’ at subsequent follow up time points (T2, T3, T4). Parents/guardians reported positive change in their child’s executive functioning across all times points, which was statistically significant. This result suggests qualitative changes for children like less difficulty starting/finishing projects. Parents/guardians also reported improvements in their child’s planning and organisational skills post parent programme.

Aggression/Defiance Subscale (Conners)

The Aggression/Defiance subscale assesses whether a child exhibits physical and or verbally aggressive behaviour; whether a child is violent; has bullying or destructive tendencies; is argumentative; has poor control of anger/aggression, and is manipulative or cruel.

Table 28 Aggression/Defiance

Comparison	No Observations	Mean Score Baseline	Mean Score Follow-up	Tvalue/df	Significance
T1-T2	244	72.45	68.84	3.8/243	<.05
T1-T3	78	73.83	71.72	1.1/77	>.05
T1-T4	35	75.57	68.37	3.02/34	<.05

Table 28 shows the results for the Aggression/Defiance subscale of the Conners Parent Report. Overall, mean scores decreased from ‘very elevated’ to ‘elevated’ from pre-programme (T1) to post programme follow up time points (T2, T4) but remained ‘very elevated’ at time point 2 (6 months’ post programme). The mean scores however, indicated a reduction in the program child’s reported aggressive and/or defiant behaviour across all time points. The change was statistically significant at T1-T2 and T1-T4.

5.5.6 Correlations Across /Between Measures

In this section correlation results from the Parent Scale, the Strengths and Difficulty Questionnaire and the Conners 3 Ed. Short Form are presented. We examined correlation effects between the change scores in measures and domains. There appears to be a stronger correlation between measures/domains for T1-T2.

Total Score Parent Scale / Total Difficulties SDQ Correlation Between Change Scores

Total Difficulties (SDQ): provides an overall picture of social and emotional issue’s faced by the programme child.

Total Score Parent Scale (PS): relates to dysfunctional disciplinary practices.

- The parents/guardians who reported improved disciplinary practices (Total Score PS) also reported positive change in their child’s Total Difficulties (SDQ) score. The

change was statistically significant while the correlation between changes was small. Change in one domain was positively correlated with change in another ($r=0.21$; $p<.05$; $n=178$; T1-T2).

- There was a small correlation in change scores between the Total Score (PS) and the Total Difficulties (SDQ) ($r=0.2$; $p>.05$; $n=75$; T1-T3). The change is not statistically significant at this time point.
- There was a very small correlation in change scores between the Total Score (PS) and the Total Difficulties score (SDQ) at T4 it was not statistically significant ($r=0.03$; $p>.05$; $n=34$; T1-T4).

Total Score PS /Executive Functioning (Conners) Correlation Between Changes Scores.

Executive Functioning (Conners): This subscale assesses if the child has difficulty starting or finishing projects and if they tend to complete projects at the last minute. It also assesses if the child is poor at planning, prioritising, and/or has poor organisational skills.

Total Score PS: relates to dysfunctional disciplinary practices.

- Parents/guardians who reported improvements in their disciplinary practices also tended to see improvements in their child's executive functioning. The correlation is small and not statistically significant ($r=0.1$; $p>.05$; $n=177$; T1-T2).
- Parents/guardians who reported improvements in their disciplinary practices also tended to see improvements in their child's executive functioning. The correlation is small and is not statistically significant ($r=0.1$; $p>.05$; $n=76$; T1-T3).
- The correlation between change scores is very small at this time point and is not statistically significant ($r=-0.2$; $p>.05$; $n=35$; T1-T4).

Total Score PS / Hyperactivity/Impulsivity (Conners) Correlation Between Changes Scores.

Hyperactivity/Impulsivity: This subscale assesses if the child is very active, is restless and/or impulsive; has difficulty being quiet; interrupts others and/or becomes easily excited.

Total Score PS: relates to dysfunctional disciplinary practices.

- Parent/guardians who reported improvements in their disciplinary practices also tended to report improvements regarding their child exhibiting hyperactive and impulsive behaviours. The correlation is small and is not statistically significant ($r=0.1$; $p>.05$; $n=176$; T1-T2).
- Parent/guardians who reported improvements in their disciplinary practices also tended to report improvements regarding their child exhibiting hyperactive and impulsive behaviours. The correlation between change scores is very small and is not statistically significant ($r=- 0.08$; $p>.05$; $n=76$; T1-T3).
- The correlation between change scores here is very small and is not statistically significant ($r= -0.2$; $p>.05$; $n=35$; T1-T4).

Total Score PS and Aggression/Defiance (Conners) Correlation Between Changes Scores.

Aggression/Defiance (Conners): This subscale illustrates the existence or not of aggression and behaviours such as – cruelty, destruction of property, deceitfulness, theft and /or serious rule-breaking behaviours.

Total Score PS: relates to dysfunctional disciplinary practices.

- The parent/guardians who reported improved disciplinary practices also reported improvements in relation to aggressive and defiant behaviours exhibited by their child. The correlation while small is statistically significant ($r=0.2$; $p<0.05$; $n=177$; T1-T2).
- There is a very small correlation between change scores regarding the Total Score (PS) and the Aggression/Defiance subscale (Conners) and it is not statistically significant ($r=.06$; $p>.05$; $n=75$; T1-T3).
- There is a small correlation between change scores here although it is not statistically significant ($r=0.1$; $p>.05$; $n=34$; T1-T4).

Total Score PS / Inattention Conners Correlation Between Changes Scores.

Inattention Conners: This subscale assesses if the child has poor concentration, difficulty keeping their mind on work. It also explores if the child makes careless mistakes; is easily distracted if they give up easily; becomes easily bored and/or avoids schoolwork.

Total Score PS: relates to dysfunctional disciplinary practices.

- The parent/guardians who reported improved disciplinary practices also reported improvements in relation to their child's concentration, and ability to keep on task. The correlation is small although it is a statistically significant ($r=0.2$; $p<0.05$; $n=177$; T1-T2).
- There is a small correlation between change scores in relation to Total Score (PS) and Aggression/Defiance (Conners) scores and it is not statistically significant ($r=.1$; $p>.05$; $n=76$; T1-T3).
- There is a very small correlation between change scores in the Total Score PS and the Aggression/Defiance subscale (Conners). It is not a statistically significant at this time point ($r= -.27$; $p>.05$; $n=35$; T1-T4).

5.6 Discussion

The results produced in this evaluation demonstrate the capacity of a specifically designed ADHD parenting programme with tailored ADHD Information & Awareness Sessions for parents and professionals to effect lasting change for families whose children experience behaviour consistent ADHD. The intervention protocol used brought about positive change for the majority of parent/guardians who took part across a range of parenting domains and change effects were also noted in relation to the children's behaviours. The majority of families who participated viewed the process very favourably. A review of the outcomes produced in this evaluation would suggest the following factors played a part in the success of the process.

The evaluation outcomes suggest that post programme parents experienced a significant reduction in the level of stress they experienced. Parenting a child with ADHD has been demonstrated to be a stressful process. A feature of the lived experience of those who parent a child with ADHD is the levels of stress and anxiety they experience (Brubaum 2016). This anxiety relates to parents' ability to deal with their children's behaviour as they develop and grow and fear for their children's future. Anxiety generates feelings of apprehension and irritability, fatigue and restlessness, feeling of brittleness or being on edge. In terms of parenting this emotional fragility can easily lead to the misreading of children's cues and signals, over attention to negative behaviours, critical commentary and the presence of a cyclical coercive relationship between parent and child. In such a cycle the parent resists engaging with the child fearing a negative outcome and the child resists interacting with the parent for fear of being met with a harsh critical or punitive response. This pattern of interaction was a notable characteristic of the families who participated in this study. It is also the case that levels of stress and mood disorder amongst the sample were comparatively high. Taylor (2015) in a meta analysis found that coercive cycles of intervention is a feature of homes where parents experience high levels of stress anxiety and depression. He also indicated that levels of coercive interaction were significantly exacerbated in those homes where ADHD is present. Further, he found the reactive nature of children with ADHD when faced with such an environment generated elevated response levels in terms of anger and mistrust and externalizing behaviours greater than those found within non ADHD children. This pattern was also found within our study. As stated, at the commencement of this process, the presence of stress, fluctuating mood and fractious relationships within the parent child/dyad were noted in the majority of those tested. However, exposure to the programme, as seen across all time points, significantly changed and indeed nearly extinguished the coercive nature of the relationships between parents and children. It should also be noted that this change was accompanied by significant and lasting reductions in participating parents overall levels of stress and anxiety.

The central element of the intervention programme made available to participants was a series of shared strategies such as enhanced communication skills, praise, contingent reward systems and positive discipline. The purpose of these strategies is not simply to reduce aberrant behaviours but to teach the child important social and emotional regulatory skills. Patterson (2013) suggested that in endeavouring to inculcate these skills and strategies in the child, the parent must consciously make an effort to be more positive and present for the child. This process he suggested removes the care blocking found in families which inevitably made the relationship between parent and child more positive. Similarly, for

children experiencing hyperkinetic symptoms, Saunders (2013) research suggests that the availability of new strategies increases the child's sense of confidence and control. Webster Stratton (2011) argues that, specifically for those parents with a child with ADHD, greater knowledge about the condition allows them an insight and understanding of their child's experience which they had previously lacked. She argues that this level of awareness enables the parent to recognise the difficulties their children experience and the extra level of supports they require. Indeed, the ADHD Programme tested here, is constituted by elements which reinforce this point of view.

The results produced in this study also suggest that parents, even those whose children experienced limited change, still viewed the process as successful and their children's behaviours more manageable. Anderson (2011) posits a possible explanatory framework for this outcome. He suggests that changing how the parent thinks about themselves, by helping them to recognize how their thoughts can affect their emotions and emotions affect their actions, invariably creates positive change in the engagement strategies parents use with their children. He argues that this thinking process makes the individuals feelings towards the manageability of their child more positive and therefore their actions will become more functional, productive and beneficial overtime. Further he suggests that exposure to programmes like the Incredible Years programme (which has been strongly influenced by the cognitive movement) are intrinsically designed to trigger this process. Similarly, Rochford (2017) argues the problem solving process which underpins this process also instils within parents a sense of competency which enables them to recognise the differences in their children in a positive light. He explains that 'they see their children as deserving of greater care support and patience'. The sentiment was given concrete form in the data in this study with parents indicating significant improvements in all aspects of their engagement with their children and in the reductions in reactivity they demonstrated with their children when aspects of the children's behaviour became problematic. The children's behaviour also improved as they were relieved from the worst aspects of negative parenting they had experienced in the past.

The content of the ADHD programme used in this study is also a possible factor in terms of the positive outcomes produced. The programme involves content directly developed by Statts (1976) such as time out and time in and token economy systems which were specifically developed for children with ADHD and ASD. The programme also places a particular emphasis on coaching skills to promote concentration, persistence, emotional regulation, communication skills and problem solving. Research indicates when used in combination these skills can reduce children's autonomic response and change and address the development of negative attributional styles which again are a feature of children with this condition (Hutchings 2015). The data produced in this study suggests that the application of these strategies did reduce hyperactive and compulsive behaviours and importantly the data also found the children's impulsivity was also fundamentally reduced. The use and indeed the format of these techniques can appear on the surface to be overly simplistic. However, the data produced indicates it was not simply the application of these strategies which brought about the changes found in this study but also the degree of consistency and adherence which the parents used when introducing these techniques. A significant body of research including that produced by Hutching (2011) and Bellingham (2019) indicates that behavioural interventions for ADHD are most effective when parents understand the core

principles of Behaviour Therapy (i.e., identification of antecedents and altering the consequences of behaviour) and the techniques are simple enough that they can be consistently implemented (Kaplan & Adelman, 2011). Fidelity and adherence measures conducted during delivery of the parent programmes and examined as part of the process evaluation indicates that this was the case, with high adherence and fidelity rating being recorded for both parents and for those facilitating the programmes.

Another factor which may have been responsible for the positive outcomes seen in this study was the dedication and planning undertaken by the Implementation Teams and Programme Facilitators. This is particularly relevant given the study was conducted within a community setting. There is increasing evidence to suggest that the transition of social interventions to community setting can prove problematic and that results produced in clinical setting are often not replicated in community study's (Fixsen et al, 2014). Implementation experts argue that treatment adherence and fidelity (which can be carefully monitored in clinical settings) often does not take place in community based setting. There were a series of inbuilt safe guards, pragmatic checks and balances within the Incredible Years Parenting Training Programme used in this study to prevent this process occurring. Hutching's (2012) found that these fidelity and adherence processes have consistently produced low attrition rates and maintain high dosage levels and in this study the vast majority of parents completed more than two thirds of the recommended 18- 20 sessions. The high retention rates in this study was affected by two factors. First the levels of support the Programme Facilitators received from their management teams, allowed them the necessary preparation time to deliver the programme correctly, and to conduct the parent support processes, such as weekly visits to participants, weekly phone calls and regular tape review of sessions, thus scaffolding the participants throughout the delivery. Programme Facilitators also had access to specialist support from an Incredible Years Mentor with a psychological background who could assist facilitators to deal with some of the more complex cases they might meet during the delivery of the programme itself. The availability of these support services were paramount to the successful implementation of the programme. In the case of this study implementation support and fidelity adherence was inbuilt. All the Programme Facilitators who took part in the study had extensive knowledge of the programme, a minimum of three days per week was provided by the management teams of each delivery agent to allow them to prepare for the delivery of the session, deliver the session, conduct follow up home meeting with parents and make the obligatory phone calls. They were also provided with five peer coaching session throughout the delivery. This series of supports proved effective and were well received by those delivering the programme. However, when one considers the issue of transitioning the programme or distributing it at scale the following caveat must be considered. Earlier it was noted that the results produced in clinical studies often do not translate to community application. Factors which affect this process include control and cost. The fidelity and adherence measures introduced allowed this study to be carefully controlled and managed. These measures however do come at additional cost.

While the results demonstrate significantly improved outcomes overall, across all of the families, the data produced also indicated variations in terms of programme impact across the population tested and differences with regard to the sustainability of the changes brought about by the intervention protocol used. Several possible explanations are worth considering with regard to this finding. This was a cohort study yet individual analysis and the pattern of

scoring indicates that some families had children who were experiencing chronic levels of difficulty related to their child's presentation. Our study indicates that within our sample levels of co-morbidity were high and co-morbid presentations differed. Children presented with a number of differing co-morbid conditions some more problematic than others in terms of behavioural regulation and executive function and consequently the levels of change amongst the study sample was inevitable. It is also true that when ADHD is considered, one must factor in the potential of differential diagnosis. The symptoms of ADHD overlap with a number of other conditions. These include neurologic or developmental conditions, emotional and behavioural disorders, psychosocial or environmental factors, and certain medical problems. Some of these conditions can of course coexist with ADHD. However, it is also the case that they may give rise to symptoms which while consistent with ADHD do not denote the presence of the condition itself, (e.g., children who have learning disabilities may develop inattention as a result of an inability to inculcate new information). A prime example of this was demonstrated by Elder et al (1998) in his study on developmental variations in age and school placement. The study presented here included children who presented with a number of possible differential conditionality's particularly learning difficulties and ASD and consequently a protocol specifically designed to address hyperkinetic behaviours would have had a reduced effect on these children's behaviour. However, these numbers were small and a filtering process was established to ensure even when co-morbidity was present the primary condition within the dual diagnosis was ADHD.

The manner in which we consider ADHD must also be taken into account when one considers these results. August's (2012) theory posits that ADHD should be best seen as a type of continuum and this was supported by the finding in this study. ADHD levels differed in terms of intensity and regulatory control. The sample was also more populated with the most complicated of the ADHD sub types which would account for the fact that some children benefited more from the intervention than others. Differences in change levels are a notable feature of the intervention used. The developer of the Incredible Years programme noted in previous studies that outcomes were often dependent on the degree of difficulty the parent/child dyad was experiencing and more importantly on the embedded nature of the child's presenting difficulty. It is possible that the families who benefited most from exposure to the new skills set and experienced the more significant improvements in child behaviour parent /child interactions, enhanced communication styles and reductions in harsh and critical parenting were, as has been reported in other studies, those best placed and prepared to implement the programme strategies with consistency and less burdened by environmental, social and psychological obstacles than those their peers experienced (Webster, Stratton and Reid, 2010). Yet it is clear that despite differences in socioeconomic background significant positive change was experienced by the majority of the cohort in this study. One possible explanation for this finding can be found within the design and content of the programmatic intervention used. The intervention was designed to inculcate key cognitive skills within Parental participants. The programme is premised on the idea that effective parenting requires cognitive skills such as the inhibition of immediate responses to attain long-term goals, the ability to focus attention on a child and keep track of the child's activities despite the many distractions of everyday adult life. These higher-order planning and problem solving skills cannot be overestimated. Indeed, it is likely that the availability of these cognitive resources alleviated the socioeconomic disparity, and contributed to the development and maintenance of an organized and appropriate environment for childrearing.

The findings produced in this study would indicate that the children experienced significant behavioural changes across a range of domains; a reminder of the cautionary note indicated earlier is required. As is the case with other neurological disorders there is no biological test to definitively prove a child is experiencing ADHD. In the case of the information documented in this study it relied on the parent as the informant. ADHD is by its very nature a trying condition for parents. By the time parents reach the stage where they are willing to participate on a parent programme they have often been treading water for several years. When considering these results therefore the impact of parenting styles and family phenotypes need to be considered. Research by Odgers (2007) suggests that parenting style can improve or exacerbate children's behaviour. Further Blomquist and Schnell (2008) found that parents with children who demonstrate high levels of hyperactivity, externalising behaviours or behavioural dysregulation show less warmth, are more permissive and inconsistent and use more critical forms of discipline. As Scott (2011) indicates the nature of the parent child relationship is by its very nature bi-directional. Both exerting influence on the behaviour of the other. This process is central to the healthy development of the child. It might also be central to the outcomes produced in this study. It is entirely possible that the scores recorded pre intervention were the result of emotional blocking (Hughes 2011). Hughes suggests that where ADHD (and developmental trauma) is concerned two forms of emotional blocking are particularly troubling for the development of the child, blocking of trust and blocking of care.

For the purpose of this study blocking of care is particularly relevant. In this scenario the parent of the hyperactive child experiences the relationship as problematic and unproductive. There is little positive reciprocity, few signals to indicate the parent is positively impacting on the behaviour of the child and as a consequence they experience a blocking of care. It is important to note that this process occurs unconsciously, the parent will continue to perform all of their parental tasks and responsibilities but the process is joyless and forced. Children who experience this process respond with a blocking of trust, they no longer feel the parent is emotionally engaged with them and a fracture in trust occurs, which leads to child Dysregulation which can manifest in symptoms such as non-boundaried behaviours, oppositional responses, impulsive decision making, hyperactivity and noncompliance. Interestingly, Hughes suggests that once a child has developed a blockage of trust the behaviours becomes embedded and consequently will transition across environments, a key feature of the diagnostic process in ADHD. This pattern of negative mother child interaction must be considered when examining the results produced in this study. It is possible that the parent self-reports pre intervention reflected a current state of mind wherein they felt powerless, lacking in confidence and control. In these circumstances even with well validated instruments and clear cut diagnostic criteria there is a potential risk of over diagnosis. Similarly, since ADHD is increasingly recognised as a continuously distributed risk dimension and in terms of externalised behaviours as a continuum. It may be the case that the coercive nature of the parent child relationships and the emotional blocking was responsible for the parent reports which in many cases placed the child's behaviour far above the cut-off point that defines the diagnostic threshold for the condition. If one were to consider the results produced in this study through this prism, then a well constituted parenting programme would invariably lead to improvement in the parent child relationship. Such improvements, however, would not counter-intuitively, be the result of a reduction in child's ADHD behaviours.

Of further consideration is the underlying ethos of the programme which implies that the parent must recognise that the ADHD child is special and that special children require additionally if they are to properly engage and succeed in their everyday lives. This ethos and the insights provided by the work of Hughes (2012) and Saunders (2013) present difficulty when it comes to assessing the levels of change noted in this study post programme. If the programme for parents creates a greater sense of confidence, control, knowledge and understanding of the condition than they previously had, if there is a significant removal of blockage of care and trust, then one might reasonably ask are the self-report measures produced capturing this greater sense of resiliency and perception of control, or are they capturing an actual change in the level of the children's Hyperactivity. This issue has been raised by Cooper (2015) and by Hall et al (2015) who have consistently argued that to track changes within an ADHD population one must always be cognizant that the potential to inflate changes or conflate symptoms remains a real and significant problem for researchers. Whilst these concerns about under diagnosis or over diagnosis are not restricted to ADHD, it does underscore the import of rigorous and careful assessment and the piloting of both programmes and measures before seeking to implement interventions to scale.

5.7 Conclusion

The results of the Outcomes Evaluation suggest that the availability of a specific ADHD parenting programme can prove beneficial in terms of reducing the symptoms of ADHD experienced by children and in improving the parent-child relationship. The study demonstrated that there were significant differences post intervention in terms of child behaviours and ADHD symptom presentation as well as parent stress and disciplinary practices (harsh /punitive parenting styles). The parents also reported improvements in relation to their child's pro-social skills. Taken collectively these results are striking.

The programme brought about qualitative improvements to children's behaviour by reducing the frequency, intensity, duration and severity of problem behaviours, the impact of which extends to the day-to-day functioning of the child and their family. The central element of the intervention programme made available to participants was a series of shared strategies such as enhanced communication skills, praise, contingent reward systems and positive discipline. The purpose of these strategies is not simply to reduce challenging behaviours but to teach the child important social and emotional regulatory skills. Parents' confidence and knowledge of effective strategies increased as did their knowledge and understanding of ADHD. The long term impact on families of this upskilling and behaviour change in parents represents an investment that has the potential to continue to reap benefits for the child, parent and wider social systems, e.g. school, extended family. By training parents in therapeutic behaviourally-based interventions, the child has wrap around support and a resource lasting into adolescence and adulthood.

ADHD is a continuum and is further complicated with comorbidities, but despite this, the study suggests that even parents whose children experienced limited change in ADHD symptomology, still viewed the participation and process as successful.

The evaluation outcomes suggest that post programme parents experienced a significant reduction in their level of stress. Parenting a child with ADHD has been demonstrated to be a stressful process, with a feature of the lived experience of those who parent a child with ADHD being the levels of stress and anxiety they experience (Brubaum 2016). This anxiety relates to parents' ability to deal with their children's behaviour as they develop and grow, and they fear for their children's future. The presence of stress, fluctuating mood and fractious relationships within the parent-child/dyad were noted in the majority of those tested. However, exposure to the programme, as seen across all time points, significantly changed and almost extinguished entirely the coercive nature of relationships between parents and children. It should also be noted that this change was accompanied by significant and lasting reductions in overall levels of stress and anxiety for participating parents.

ADHD is a disorder characterised by persistent and impactful behavioural patterns that affect a child's experience of the world as well as affecting how the child is viewed by their world. The project at its core offered tangible skill development to parents which gave them the opportunity to be active participants in their child's treatment.

As stated throughout this report, ADHD is a pervasive disorder which can affect all aspects of a child's life. Current pharmacological treatment focuses on the short term relief of symptoms and is often applied with a specific purpose to constrain behaviours to allow the child to engage with academic institutions. This means that outside of this domain the majority of the

child's and family's lived experience is unaffected by the treatment. It is also the case that children often experience a bounce back effect from these medications, resulting in elevated levels of symptom intensity and frequency. This negatively impacts on the child and family functioning, and consequently results in the embedding and normalization of family dysregulation and reductions in collective family efficacy. The evidence of potentially severe difficulties for the child and family resulting from current medical intervention suggests that alternative treatment pathways are a requirement. In addition, ADHD and specifically the labelling of children with this condition remains problematic for families who view the diagnostic identifier as negative and stigmatizing. This study demonstrates that the use of an evidence-informed ADHD-specific parenting protocol delivered within communities and accompanied by coordinated multi agency ADHD Information and Awareness workshops can significantly reduce the impact of ADHD on the lives and functioning of children and families. This community-led approach provides substantive evidence that community-led parenting interventions are a viable alternative to current treatment regimens and, by virtue of information dispersal, can go some way to dispelling the negative connotations associated with ADHD. Moreover, it confirms that community-based health care professionals have a vital role in the provision of balanced and supportive information regarding ADHD and in addressing the needs of affected children and their families.

It is hoped that the findings from this research will go towards reframing dialogue in relation to ADHD and parent programmes. Further, that it will contribute to understanding ADHD and the importance of early intervention and the pertinence of parenting programmes in relation to improving outcomes for both the parent/guardian and children with behaviours consistent with ADHD.

Process Evaluation:
Methodology, Results,
Discussion & Conclusion

DRAFT

6 Process evaluation

6.1 Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder usually diagnosed in childhood, and often persisting into adolescence and adulthood. Characterised by a pattern of behaviours, including poor attention, hyperactivity and impulsivity, ADHD affects the child in all areas of their life, including family, school, and social situations. Having a child with ADHD in the family shifts routines and relationships, affecting everyone in the household, not just the child with ADHD. Parental stress has been shown to be highly prevalent in families with a child with ADHD (Theule, Wiener & Tannock 2013; (Mohammadi, Farokhzadi, Alipour et al. 2012). A meta-analysis of 80 studies of parents' lived experiences of having a child with ADHD, highlights the daily struggles and emotions parents go through in their efforts to manage family routines (Corcoran, Schildt, Hochbrueckner & Abell, 2017). Yet despite their constant efforts to moderate their children, parents had limited success. The effects of the constant parenting struggle impacted on other areas of the parents' lives, such as their health, psychological well-being, marital, and occupational functioning (ibid).

Parental stress, particularly maternal stress, has been found to exacerbate behavioural problems in preschool children with ADHD symptoms. In addition, the relationship between maternal stress and children's functioning has been found to be bi-directional. Evidence from a longitudinal study by Breaux and Harvey (2018) found that overreactive parenting by mothers and life stress were predictors of more child ADHD symptoms, and greater child ADHD symptoms significantly predicted greater maternal life stress and depressive symptoms. However, while the behaviours involved in ADHD (inattention, hyperactivity and impulsivity) can present before the child reaches school age, it is often not until the child starts school that parents get an explanation for their child's behaviour. As Harpin (2005) points out, it is when the child starts primary school, that their ADHD begins to be seen as being different when compared to their classmates who develop the skills and maturity that enable them to learn successfully.

While some teachers adapt the classroom environment to the learning needs of the child with ADHD, more often than not, the child experiences academic failure, rejection by peers, and low self-esteem. Evidence confirms that ADHD is associated with poor grades, poor reading and math standardized test scores, and increased grade retention (Loe & Feldman, 2007). The scale of the challenge for the education sector is reflected in the high costs for the management of ADHD in children. Having ADHD is associated with increased use of school-based services, increased rates of detention and expulsion, and ultimately with relatively low rates of high school graduation and postsecondary education (Loe & Feldman, 2007). In addition, ADHD is the most common reason for a referral to Child and Adult Mental Health Services (CAMHS), accounting for over one third (38%) of all presentations (Health Service Executive, HSE 2013).

Social and emotional situations are also difficult for children with ADHD (Classi, Milton, Ward, Sarsour & Johnston, 2012). This includes the child's social interactions with others in their social environment, such as parents, siblings, teachers, and friends, with interactions

often filled with misunderstanding and mis-communication. Because the child with ADHD has a decreased ability to self-regulate their actions and reactions toward others, relationships can be overly tense and fragile, which can be stressful for the child and those around them. Improving outcomes for children with ADHD is thus important from the perspective of the child, the family, and society. There is an urgent and growing need for prevention and early intervention programmes to help children and families affected, and counteract the spiral of negative outcomes associated with ADHD.

Mental health prevention programmes have been criticized for having a limited connection to the goals of the contexts in which they are implemented, for example social emotional programming in schools, or mental health diagnosis and treatment in primary care, with uneven effects and poor sustainability (Alegria, Atkins, Farmer, Slaton, & Stelk 2010). Services and supports have been delivered by providers working in distinct silos, increasing fragmentation and duplication. Longstanding criticisms about the failings in mental health services and supports for children and families has led to calls for better integration, with health, education, social care and the voluntary sector working more closely together in a pragmatic and practical way (Royal College of Psychiatrists, 2019; Alegria, Atkins, Farmer, Slaton, & Stelk, 2010; Department of Health, 2018, Department of Health 2020).

Promoting collaboration at the front line of service delivery was a key part of the vision underpinning a new partnership between the organisations which came together to collaborate under The Changing Lives initiative, and is the focus of the present paper.

The Changing Lives initiative was a three-year partnership (2017-2020) between statutory and community-based organisations in Northern Ireland (Belfast), Ireland (county Louth), and Scotland (Highlands in Argyll & Bute), supported by the European Union's INTERREG VA Programme. The aim was not to develop a new programme for families affected by ADHD, rather, to deliver the validated Incredible Years Parent Programme (IYPP), in a new way, based on collaboration at the front line in urban and remote communities in the different jurisdictions, working with some of the most disadvantaged communities in these areas. The major implication of this cross sector collaboration is to acknowledge the diversity related to the range of providers, persons and contexts important to children's development. The model used was based on early intervention, targeted to families with children deemed to be at higher risk of ADHD. Group-based parent training has been successfully used across a range of contexts for behavioural and emotional disorders (McGilloway et al., 2012; Lange, Daley & Frydenberg et. 2016) and is recommended as the first line of treatment for ADHD in children (NICE, 2018). The IYPP is a comprehensive programme designed to promote emotional and social competence and to address emotional and behavioural problems in children (Webster-Stratton, 2001). It has been used extensively and studied internationally as a treatment for children with conduct problems, as well as a preventative intervention. Evidence points effectiveness of IY programmes on both parent and child outcomes (Gardner, Burton, Klimes, 2006; Dishion, Shaw, Connell, Gardner, Weaver, Wilson, 2008; Furlong, McGilloway, Bywater, Hutchings, Smith, Donnelly, 2012; McGilloway, Mhaille, Bywater et al. 2012; Menting, Orobio de Castro, Matthys, 2013). Yet little is known about the processes of change or how community context affects implementation and shapes outcomes for families.

This study reports the results of a mixed methods process evaluation. Using process evaluation allows for the examination of participants' views on the intervention and the contextual factors that may mediate intervention effects (Al-HadiHasan, Callaghan & Lymn, 2017). This in turn adds a depth of understanding that allows researchers to explain outcomes for the phenomena under study (Limbani, Goudge, Joshi et al. 2019). The present study focused on factors influencing the delivery of an ADHD focused Incredible Years Parent Training Programme; factors associated with uptake and completion; structures, resources, and processes through which delivery was achieved, and the extent to which the programme was delivered as conceived. It is the first study of its kind to examine the implementation of an ADHD focused Incredible Years Parent Training Programme by a cross-sector partnership working in urban and remote communities in different jurisdictions. Participating parents were invited to take part in research to support three separate programme evaluations: (1) a Process Evaluation, which is the focus of the present paper, (2) an Outcomes Evaluation, and (3) an Economic Evaluation (reported elsewhere). This study was approved by the Dundalk Institute of Technology Ethics Committee.

6.2 Methodology

The intervention

The Changing Lives Initiative Intervention was delivered in greater Belfast and Lisburn areas (in Northern Ireland), in County Louth and surrounding border counties (in Republic of Ireland and Northern Ireland), and the Argyll & Bute region of Scotland. It aimed to reach a total of 560 families with children aged 3-7 years of age experiencing behaviours consistent with ADHD, but not diagnosed with it or taking medications for ADHD. Participants were recruited onto the programme through targeted Information and Awareness sessions delivered by the project psychologists and programme facilitators in schools, libraries, community centres and other suitable venues in the three jurisdictions. Information and Awareness sessions were designed to create a better understanding about ADHD and associated behaviours, and to provide parents with basic strategies and effective practices for supporting children's social-emotional development and preventing challenging behaviours. The Information and Awareness sessions also acted as a filter for parents to enter the Screening Programme, which was managed by the psychologists (reported elsewhere). Where screening results indicated that a family met the eligibility criteria (i.e. had a child age 3-7 years experiencing behaviours consistent with ADHD), they were offered a place on the ADHD focused Incredible Years Parent Training Programme

In general, where the Incredible Years (IY) parent programme is offered, it consists of 14 weekly sessions, each lasting for 2 to 2.5 hours, delivered by two programme facilitators to approximately 12 parents per group. By contrast, the IY programme delivered under The Changing Lives initiative, consisted of 20 sessions. This was designed to offer more scope to focus on improving understanding of ADHD and behaviour management skills, such as reducing harsh discipline and fostering parents' ability to promote children's social and emotional development. In other respects however, sessions were as stated earlier, 2 to 2.5 hours in duration and delivered by two facilitators to approximately 12 parents per group.

Fidelity

Fidelity was an ongoing priority for the project, from the initial stages of planning and design of the intervention to the training of staff, teachers and early years practitioners. All project staff received IY training from an IY Mentor. A carefully guided script with examples to support learning was developed by the project psychologist to support staff to host Information and Awareness Sessions with varied organisations and individuals. The process for monitoring fidelity of the individualized, yet standardized, information and awareness protocol was supported by ongoing oversight by the psychologist. An added consideration was the balance between fidelity and adaptation to better suit different organisations and individuals. Thus scripts and examples were designed so that they could be adapted to suit different types of organisations without changing the key messages. Similarly, an interactive and dynamic workshop was developed for teachers and early years practitioners to support a better understanding of ADHD and strategies for key behavioural issues. Given the interactive design of the workshops with professionals, to ensure fidelity, they were delivered across the three jurisdictions by the project psychologist. The process for screening parents onto the programme was similarly robust, with standardized screening measures used by staff and supported by ongoing oversight by the psychologist.

For IY interventions, fidelity concerns relate to the degree of fit between the programme as it was developed and its delivery in diverse settings. Bywater, Gridley and Berry et al (2018) identify five key components of fidelity: adherence, exposure, quality of programme delivery, participant responsiveness and programme differentiation. Adherence is concerned with whether or not the programme's content and procedures are delivered as designed. This is operationalized by facilitators or group leaders teaching parents relationship-enhancing and limit-setting strategies. Videotaped vignettes are used to provide positive modelling opportunities for parents, prompt discussion and problem-solving amongst the group, practice new skills, and for homework to consolidate learning between sessions. Exposure is concerned with ensuring that treatment 'dose' matches the original programme i.e. the number and duration of sessions. This is monitored through IY facilitator checklists to record how much content of each session has been delivered, and the number of sessions parents attend to assess 'dosage'. Quality of programme delivery is concerned with facilitators' skills in using materials and techniques prescribed by the programme. This can be seen to be operationalized through collaborative relationships between parents and group facilitators. Facilitators should therefore adapt the intervention to meet parents' needs, spending more time on the content that parents need more support on. This is monitored through the completion of facilitator self-report checklists. Participant responsiveness is concerned with the extent to which parents contribute to group discussions and feel empowered to find their own solutions and support networks. It is monitored via weekly and end of programme parent reported evaluation forms. Finally, programme differentiation is concerned with the critical components of the programme and whether or not sessions were delivered as intended. This is monitored through completion of weekly facilitator checklists. Bywater et al (2018) argue that the degree in which these elements are met during delivery affects how well the programme succeeds in achieving its goals of promoting change. Webster-Stratton recommends the use of these multiple ways to support fidelity, in addition to video review of sessions, and requires completion of all these elements for accreditation of group leaders. In the present study, each site monitored fidelity of implementation through IY parent weekly evaluation, the leader checklist, the leader process checklist, the facilitator peer evaluation, and parent end of programme evaluation, as outlined below.

Leader Checklist & Leader Process Checklist (Weekly)

The leader checkbox provides a list of vignettes for facilitators to indicate the vignettes they used in each session, and starred tasks which are recommended to be used at the very minimum. Similarly, the process checkbox allows facilitators to indicate the tasks they have completed in sessions (e.g. write the agenda on the board; brainstorm group ground rules; role play/practice being "appreciative audience" in large group).

Parent Weekly Evaluations

The parent weekly evaluation invites parents to select one of four responses, ranging from "not helpful; neutral; helpful; and very Helpful" regarding the topics covered (e.g. content of the session; video examples; group leader's teaching and leadership skill; group discussion and interaction; role play and practice).

Final Satisfaction Questionnaire

Parents completed a more detailed evaluation at the end of the programme, responding to a series of survey like questions, selecting one of seven responses to indicate their level of satisfaction (from “very dissatisfied” to “greatly satisfied”) with their child’s social, emotional, and academic developmental progress. They were also provided with a series of questions on the overall programme, the teaching format, parenting techniques, and evaluation of group leaders and parent group. Finally, they were invited to respond to three open-ended questions regarding how the programme could have been improved, if they felt the need for additional parenting assistance, and what they saw as the main benefit of the programme.

Analytical strategy

A mixed method process evaluation was undertaken, utilizing data from questionnaires, and one-to-one semi-structured interviews with participants, programme facilitators and project partners. Combining quantitative and qualitative methods is an increasingly popular strategy in public health interventions and particularly in complex intervention settings due to the growing importance of interpretative research and insights into people’s perspectives (Cheng & Metcalfe, 2018).

A questionnaire was designed to gather demographic information on participating families. This aimed to allow for a better understanding of background characteristics, including age, marital status, work situation, main source of income, and family experiences of ADHD. A single item scale was also used to measure participants’ self-rated mental and physical health, based on a five-point scale, ranging from very good to very poor. All participants were invited to share their views and experiences of the programme in face-to-face interviews with the researchers. We were successful in getting permission from 7 parents who subsequently took part in in-depth semi-structured interviews designed to elicit views on the programme and how well [or not] it supported positive behavioural changes in their children in different situations and contexts.

In-depth semi-structured interviews were also held with programme facilitators, local coordinators, the project manager and project partners. Interview guides were designed to elicit responses on the following: fidelity, engagement, barriers to implementation, supports / resources and relationships among partners. All interviews were analysed using thematic analysis to identify common themes – topics, ideas and patterns of meaning that came up repeatedly (Braun, Clarke & Rance, 2014). A sample of fidelity monitoring data collected by facilitators was also selected at random for analysis, representing one programme from each site (Greater Belfast & Lisburn area, Louth & surrounding border area, and Argyll & Bute). Percentages of completed tasks and vignettes (including recommended minimum vignettes) were calculated for each programme.

6.3 Results

A total of 219 families consented to take part in this research. Demographic characteristics of participating families are presented in Table 29. The mean age of participants, mostly mothers (92.1%) was 34.8 years (SD=7.09). Most participants were married or living with their partner (74.3%) but some (25.7%) were parenting alone. Most were also participating in paid work (71.2%), but 21.5 % were reliant on benefits and a further 3.2% were reliant on benefits and paid work for the family income. Most (61.2 %) had come to the programme for support with ADHD-like behaviours by male children. Participants were relatively well educated, with 44.8% educated to degree level or above. While most owned their own home, others were living in privately rented accommodation and a small number had very unstable housing conditions.

Table 29: Demographic characteristics of participating families

Category	N	%
Location		
Ireland	63	28.8
Northern Ireland	119	54.3
Scotland	37	16.9
Total	219	
Gender		
Male	16	7.9
Female	188	92.1
Total	204 (15 missing)	
Gender (programme children)		
Male	134	61.2
Female	48	21.2
Total	219 (37 missing)	
Living arrangements		
Married / living with partner	162	74.3
Separated / divorced	9	4.1
Never married / widowed	47	21.6
Total	218 (one missing)	
Relationship to child		
Mother	182	89.2
Father	15	7.4
Grandparent	5	2.5
Relative	1	.5
Other	1	.5
Total	204 (15 missing)	
Child lives with		
Both natural parents	150	68.5
Natural mother	56	25.6
Joint custody	4	1.8

Other	9	4.1
Total	219	
Highest level education		
Secondary level	77	35.9
Third level college	11	5
Degree level	81	37
Postgraduate qualification	17	7.8
Other	29	13.2
Total	219	
Source of family income		
Paid work	156	
Benefits	47	21.5
Both	7	3.2
Other	9	4.1
Total	219	
Housing status		
Owner occupied	120	54.8
Public housing	60	27.4
Private rented	33	15.1
*Other	6	2.7
Total	219	

*Various unstable housing circumstances.

Poor mental health is an important public *health* challenge, and this is confirmed in the present study, with 46.1% (n=100) reporting their mental health as very poor, or poor to adequate, and treatment for depression recorded for 48.4% (n=104).

Thematic analysis

Twenty-five semi-structured interviews were conducted with parents (n=7), programme facilitators (n=8), project manager, local coordinators (n=3) and project partners (n=7). The results showed high levels of participant acceptability of the ADHD focused IY Parent Programme and draws attention to the role and need for cross sector collaborative partners in the delivery of services. Thematic analyses identified a number of themes and subthemes related to programme feasibility and implementation: (Working on relationships takes time, with subthemes interagency relationships, and parent-child relationships; implementation in everyday life, with subtheme, empowering parents; the benefits of parent-to-parent support; strengthening facilitators' competency, with subtheme implementation adherence, and partnership working, with subtheme financial processing by SEUPB.

Working on relationships takes time

6.3.1.1 Interagency relationships

The importance of good relationships and the time needed to develop same emerged as a theme for partners in their engagements with local schools and health professionals. The three partners delivering the intervention all had previous experience of parent programmes,

including Incredible Years. They also had evidence of the need for an intervention to support parents with children at risk of ADHD. Yet they experienced considerable recruitment challenges when trying to enlist parents through local schools. In some cases it was felt parents who would have benefited from the ADHD focused IY Parent Programme may have previously completed the Basic IY Programme, thus may not have considered another IY programme relevant to them. However, for the most part it was seen to concern schools that the partner organisation had no previous working relationship with. *“You have to build a relationship with the principal. You know, they have to believe in the programme. They have to believe in the people that they’re dealing with, the facilitator they’re going to be meeting.”*

This was seen as a process which takes time. *“I would say the first school I could sort of put my hand on my heart and say, ‘If I never lifted another finger, Incredible Years would continue in this school forever and ever’, will have been at least seven years You go into the school, there’s murals on the wall, you know, Wally and Molly and the puppets that are used on the programme. There’s signs of it everywhere and it’s not forced. It’s not pretend... That doesn’t happen overnight...”*

Positive feedback from parents was also seen as part of the process which would feed into recruitment. *“Those first 30-odd parents that have completed the programme... gone through the full 20-week programme ... they become stakeholders. They become part of your marketing and that’s my own experience from doing Incredible Years for the last 12 years, 13 years. They become key.”*

For the community sector partners, recruitment was also at times frustrated by their ability to work across boundaries in the context of service constraints on health professionals and professional ‘turf’ issues. As one manager commented, *“for the project to be successful anywhere....you need to be in the thick of it, integrated with all the other services... [but] they are completely swamped... they’re not getting their core work done, so they really haven’t time.”* Another added, *“...part of it is that professional wariness of a community organisation doing a clinical thing... ‘Well, who are you to be talking to children or to families who have got children at risk of ADHD... ‘Who are you, like, you’ve no medical background’.”*

However, the time and effort spent by partners over the course of the project has yielded results in the longer term. By year three of the project, the intervention is now recognised and valued by many professionals in the health and education sectors. Project partners now report receiving a steady flow of referrals.

6.3.1.2 Parent-child relationships

Changing relationships for parents and children was also something that was seen to be a process that necessitated time. Reflecting on the need for a 20 session(week) intervention for parents, the comments of one participant reflect the feeling of many:

“yeah, that [20 weeks] was the biggest thing but, hand in hand, the children need that time to adjust. Do you know, ... having done those 20 weeks and having lived out the full experience like, how’s the relationship changed now with your child in comparison... yeah, it was a big commitment but, ... children need them 20 weeks to adjust.”

The importance of having the time to work on relationships and develop new skills was described by the psychologist as *“build[ing] skills very gradually and without even people realising they’re building them... the programme is designed to, first of all, get parents to look positively at their children....that’s one of the first things that they’re asked to do, is to comment positively, and then that’s maintained all the way through the 20 weeks... it’s a habit by the end...”*

Implementation in everyday life

Parents reflected on life before they did the programme - the constant struggles to manage family routines, and contrasted this with how they manage their child’s behaviour currently.

“...it was a case of trying to get through each day, it was like we were in survival mode... there was never a chance to enjoy him... it was the case of me always trying so hard to keep everything stable so that he wouldn’t blow up or start kicking and screaming, so you were always like walking on eggshells.

Another commented: *“I was stressed from the minute she got up in case she didn’t conform and I couldn’t get her breakfast into her and she was giving me the run-around and I just felt like I’d failed at 10 past nine, knocking into work...”*

They talked about the different parts of the programme and how it impacted on them.

“...going through all the vignettes, seeing what other people’s lives can be like on a daily basis, how they control those and how they implemented things...other parents sharing their experiences in the room as well was really important because something may have worked for one parent and not worked for another.... the home activities ... you weren’t just going to the class and leaving it at that, and coming next week, there was stuff to take away, implement and use at home.”

6.3.1.3 Empowering parents

Participants described being *“calm around each other” ... “coping better” ... “having learned to establish skills of how to handle them when they do have a meltdown.”* One mum, who had been fearful of what the future held for her son because of his behavioural issues, described how her expectations of services had changed after completing the programme:

“My concept of it has changed on how I deal with it. My only concern would be making sure the authorities ... put in place what they need to put in place and ..it’s not left too late. But, having the knowledge of the programme and taking the stuff away, I’m more prepared to speak to those people because his first assessment, they kept saying well, maybe because you and his dad have separated, it’s having an effect on his behaviour...I find that they were using excuses ...not being on the programme, maybe I wouldn’t have been prepared for that.”

Another said: *I understand now how my actions and words would have had a negative impact on him and the tables have turned to where I’m now the one who would see if a child says something negative to [him] I’m the one that’s protecting [him]...he talks a lot because he’s got loads of energy and I would be the one that’s like [his] advocate and the person standing up for him explaining things. Like we’re working on talking quietly and we’re working on taking breaks and having quiet time, so that he’s not taking in other people’s negative comments and not feeling bad and having his self-esteem crushed... I have changed and I’m now trying to change other people’s comment.”*

The benefits of parent-to-parent support

Consistent with Graham and Rutherford (2016), our findings show parent-to-parent support happened in different ways, including within groups through social interactions as participants drew on lived experiences, giving—and getting—empathy and in turn building social *connections with others*. Participants spoke of the challenges they faced in accessing supports. *“Everything is so stretched with the education system and health service. That is the common message. They spoke of the benefits of learning from the experiences of other families, describing it as “amazing...so many people there who knew what I was talking about. [I was] not the only one. It is not my fault that he is the way he is.”*

The spillover effect could be seen outside of groups with parents exchanging telephone numbers, creating WhatsApp groups to send messages and chats about their children with other parents. In addition, prior to COVID-19, some parents had also organised *social gatherings with other parents and children*. They perceived this support helped them meet their children’s needs better, and with greater confidence and hope. *“Really great to have that support network....[knowing they were] at the end of the phone and you could phone them and they were there for you if you needed to go meet them for a coffee during the week, if you were struggling with something - that support was amazing.”*

Strengthening facilitators’ competency

While the majority of facilitators were experienced in parent programmes, only two were accredited IY facilitators – one in Belfast, and one in Louth. Training and ongoing mentoring of facilitators was therefore an important part of the infrastructure of the project. An accredited IY Mentor provided training to facilitators prior to programme implementation. The mentor also provided peer coaching throughout the implementation period, as needed, individually and collectively, sometimes on foot of issues highlighted by the team. *“As facilitators we would sit down together and talk about any issues, or anything that came up and find a solution together as a team and then, um, if it was something ... we weren’t sure of, then we’d contact the peer coach. But initially we would talk about it together as a team and come up with a solution.”*

Facilitators found peer coaching *“invaluable”*, describing it as: *“...our time...where we unpack our parents you know, and why do you think this is, and what did you do, you know, that kinda thing. So it was hugely beneficial.”* The process of ongoing peer coaching, mentoring and supervision continued throughout the accreditation process for facilitators to support programme fidelity. At the time of writing, two additional facilitators from the Louth team had gained IY accreditation, with the Belfast team reported to be *“well on their way towards it.”* Over and above this, non-IY training and support was provided to facilitators by the psychologist, including a summer school and half day sessions on topics like sleep and ADHD, anxiety and ADHD, and other co-morbid disorders. All training also incorporated opportunities for peer knowledge sharing and learning.

6.3.1.4 Implementation adherence

While balancing flexibility and fidelity, facilitators tailored to programmes in response to the specific presenting needs of families. In some cases sessions got condensed or elaborated to

respond to the needs of participants. Similarly, organizational constraints often meant that scheduling became an issue *“to fit around the school holidays too so sometimes you know two sessions get condensed into one, yet still everything is covered in all the main topics.”*

Another facilitator explained how she chose the videos to engage different types of families, pointing out: *“If you got a group in there all single parents, there's no point showing loads of videos with loads of kids and or vice versa. They'll look at a video of one of two parents focusing on a one child they'll say 'well that's not appropriate to me because that's not real', so you try and pick the vignettes to suit the families you have.”*

She also reflected on IY checklists, noting: *“I don't always do them because you normally have at least one or two people who have difficulties and I always think that bringing out lots of written work for people to do put people off and you know that the ones that can't do or worry about it then I don't want them not to come next week as they think they have to do all this written homework. I might use them in a different group, depending on the people.”*

Partnership working

Partnership working can span employment issues, organisational governance and workplace innovation, with important implications for implementation and sustainability. Notable strengths of the partnership included an overarching shared approach to understanding the needs of families with children at risk of ADHD to avoid providing a limited and limiting intervention. Thus all partners used the same model, practice and protocols across the three jurisdictions. Additionally, in the process of developing and implementing the intervention they benefited from cross-border training, knowledge sharing and sharing of expertise. As one project partner noted, *“it is that opportunity for people to learn and support each other and what you are building then is the cross-border interagency connections”*.

Partners were also able to share resources, with the project manager and psychologists working across the jurisdictions. In addition to the benefits associated with the sharing of costs, having the project manager and psychologists working across the jurisdictions offered built-in supports to buttress the implementation of the model with fidelity. As the project progressed, it also facilitated cross border mobility of parents, with parents in Newry and Armagh attending programmes in Louth and parents from Louth attending programmes across the border (i.e. access based on proximity rather than borders).

What the project demonstrated which was less viable was unified systems. For example, facilitators from Scotland were drawn from a pool of existing employees from Argyll and Bute Health and Social Care Partnership, some employed by the NHS Highland and some by Argyll and Bute Council as nursery nurses or social work assistants. This meant they could be called upon at short notice. As one of the team noted: *“Child protection overrules everything in the NHS and the Council, so if anything like that comes up, IY always gets pushed out the window, which is nobody's fault, but it can be difficult, so that's when I would have to cover different areas. I could literally have to travel 100 miles to cover for somebody if a child protection issue came up.”*

Working with different statutory organisations, with different IT policies and software requirements, led to challenges for some programme facilitators with the move to online delivery as a result of COVID-19. Describing the difficulties she encountered organising meetings and running online groups, one facilitator noted: *“In Ireland the partners are using Zoom and we're not allowed to use Zoom in the NHS or the Council because it's deemed not safe, so if I'm doing a Zoom meeting with the ones from Belfast and Louth, I have to make sure I'm at home that day because I can't use Zoom in my workplace. The NHS has an account with Microsoft Teams which is fine, but the Council has got the account with Skype for business. They're only supposed to use that, we're only supposed to use Teams, and then everybody else uses something else.”*

She added: *“It's not like a major deal but it just makes everything a bit more difficult and it kind of puts people off because you know everyone's a bit scared of delivering online anyway because it's new it's different, it's not the same so then to have added hassles of all this kind of stuff, and not having the right equipment or not having access to Wi-Fi, like in the hospital where I work, we are not allowed access to the Wi-Fi so I can't even use my own personal device. Also, I share an office with six other people, so in reality I couldn't really run a group from my office so I'd need to find somewhere else and I'd probably end up doing it from home but then of course you've got people's home internet and things.”*

Claiming back expenses related to running the weekly sessions was also an issue for some facilitators: *“well, for the weekly groups you buy tea and coffee and biscuits, so to do that you know, I would go into the shop and buy it myself and then keep the receipt. So every week for four weeks and obviously at the start of the group as well you've got things like a box of tissues and some hand gel or sweets, stickers and pens, little toys or gifts that IY like you to use, so all that comes out of my pocket and then at the end of the month, the receipts go in and I fill out my form and it comes back into my wages.*

6.3.1.5 Financial processing by Special EU Programmes Body (SEUPB)

Community and voluntary organisations have long been recognised as an important part of the social economy, providing innovation, delivering services locally, and performing a vital role in communities. Funding for the sector comes through grants, public sector contracts or trading income, with each involving a relationship with a different type of funder. Grant funding from the EU is an important source of income for the sector in general, but the complicated and bureaucratic systems of project reporting have been shown to create pressures for small to medium sized organisations with limited resources and cash reserves. Reflecting on the episodic pressure resulting from slow turnaround of financial reports, one partner noted that, in November 2018, as the project neared the end of Period 9, financial claims were outstanding from Period 5 and Period 6, with Period 7 claims, which commenced in March 2018, not even considered at that stage. It was noted that the Special EU Programmes Body (SEUPB) would request information, and when this was submitted to them, partners assumed the claim was processed, until further unrelated requests were received for the same financial report.

The workload attached to reporting increased the financial uncertainty for the community sector partners. *“My fear is that the constraints imposed by SEUPB are too much for our capacity as an organisation, that we are struggling and will continue to struggle in order to comply with those requirements. We are totally, you know, dependent on restricted grant funding that comes in and we’re trying to mix and match across various funding streams.” We need a faster response. We need more flexibility in relation to how we use the funding that’s been allocated to us.”*

Parents’ evaluation of the 20 session programme

In order to examine parents’ perception of the programme, weekly and end of programme feedback were analysed. While it was planned to examine five programmes from each jurisdiction, as was the case for Belfast and Louth, only one programme was analysed for Scotland because they did not start delivery of the intervention until 2019. Data for Scotland should therefore be interpreted with caution given the lower n present and the fact that feedback was not completed for all sessions.

In order to test for any differences across sites, Kruskal-Wallis H test was used. Summaries of participants’ weekly feedback are presented in Table 30. Overall very high levels of satisfaction was reported by parents, with a mean overall score of 15.36 out of a possible 16. Due to the large number of tests, the rough false discovery rate was used to control for type 1 error associated with making multiple comparisons (Benjamini & Hochberg, 1995). The p value is reduced by multiplying it by $(n+1)/2n$, where n is the number of tests being run. The rough false discovery is less conservative and has greater power than the Bonferroni correction. Using this method, the p value was reduced to .0264.

Table 30: Parents' perceptions of weekly sessions

	Louth (n=28)	Belfast (n=27)	Scotland (n=4)	Overall	Kruskal Wallis H
Session 1	14.67 (2.10)	15.08 (1.44)	15.25 (.957)	14.9 (1.74)	.030
Session 2	15.04 (1.19)	15.11 (1.12)	15.75 (.500)	15.12 (1.12)	1.728
Session 3	14.39 (1.96)	15.17 (1.09)	15.00 (1.15)	14.77 (1.62)	1.259
Session 4	15.12 (1.16)	15.10 (1.52)	-	15.11 (1.32)	.079
Session 5	15.07 (1.44)	15.36 (1.09)	13.50 (3.79)	15.07 (1.60)	1.330
Session 6	15.36 (1.14)	15.53 (1.06)	14.75 (1.89)	15.37 (1.18)	1.008
Session 7	15.32 (1.14)	15.57 (.843)	12.75 (3.40)	15.23 (1.46)	5.918
Session 8	15.77 (.869)	15.89 (.315)	14.00 (2.00)	15.70 (.904)	8.577*
Session 9	15.50 (1.06)	16.00 (.000)	14.75 (1.89)	15.57 (1.04)	5.085
Session 10	15.46 (1.22)	15.46 (1.13)	12.25 (2.87)	15.15 (1.67)	7.794*
Session 11	15.90 (.302)	15.27 (1.42)	13.33 (2.31)	15.32 (1.41)	5.525
Session 12	15.37 (1.30)	15.91 (.302)	15.67 (.577)	15.58 (1.03)	1.595
Session 13	15.55 (.963)	15.20 (1.26)	14.00 (1.83)	15.27 (1.23)	5.057

Session 14	15.56 (1.12)	15.55 (.820)	-	15.56 (1.03)	.356
Session 15	15.73 (.799)	15.73 (.647)	-	15.73 (.724)	.084
Session 16	16.00 (.000)	15.73 (.905)	-	15.89 (.577)	1.455
Session 17	15.89 (.471)	15.73 (.905)	-	15.82 (.658)	.167
Overall Mean	15.39 (1.07)	15.49 (.933)	14.25 (1.93)	15.36 (1.19)	

***Significant at $p < .05$**

Summaries for parents end of programme satisfaction questionnaires are reported in Table 31. Again high satisfaction scores were reported across all three sites with overall satisfaction and Group Leaders (Programme Facilitators) receiving particularly high scores. Significant differences were observed on all measures apart from views on 'Parent Group Leader(s)', with Louth reporting the highest scores across all four measures. No significant difference was observed for Scotland but again, issues outlined above must be considered.

Table 31: Parent end of programme satisfaction by jurisdiction

	Louth	Belfast	Scotland	Overall	Kruskal Wallis H
Overall Programme (Out of a possible 70)	65.95 (2.84)	60.41 (4.87)	63 (5.59)	63.57 (4.70)	21.394**
Teaching Format (Out of a possible 63)	59.37 (3.32)	56.05 (5.29)	54.25 (4.72)	57.63 (4.63)	8.186*
Parenting Technique (Out of a possible 91)	86.97 (4.24)	83.07 (6.21)	-	85.19 (5.55)	6.490*
Group Leaders (Out of a possible 42)	41.87 (.529)	41.59 (1.37)	-	41.75 (.969)	.254
Parent Group (Out a possible 28)	20.78 (1.71)	19.54 (2.28)	-	20.28 (2.03)	5.97*

*Significant at $p < .05$; **Significant at $p < .001$

Fidelity

To further explore fidelity, one programme was selected at random from Louth, Scotland and from Belfast. The percentage of vignettes used (including recommended minimum vignettes) and completed tasks in the programmes were then calculated for each. Across the programme examined for Louth, 43.8% of vignettes were completed for sessions overall, and out of the

minimum recommended vignettes outlined, 58.9% were completed. Tasks where full adherence was reached included: *review group list of behaviours want to see less of and establish positive opposite*; *role play the play skills using academic and persistence coaching*; and *talk about modelling self-praise*. Adherence to the programme tasks lowest for role play, child directed play, and buddy tasks.

Across the programme examined for Belfast, 54.3% of vignettes were completed for sessions overall, and out of the minimum recommended vignettes outlined, 73.7% were completed. Sample tasks where full adherence was achieved included: *buzz-encouraging words to promote child's self-confidence*; *review and elicits reactions and experiences to praise and reward concepts*; and *brainstorm benefits and barriers to ignoring*. Adherence was lowest in talk about impact on children's temperament on parenting, talk about buddy experiences and practice dinner table scenes.

Across the programme examined for Scotland, 44% of vignettes were completed for sessions overall and out of the minimum recommended vignettes outlined, 69% were completed. Examples of tasks where full adherence was reached included the following: *brainstorm benefits of parent/child play*; *practice the play skills using descriptive commenting and no questions*; and *role play the play skills using academic and persistence coaching*. Adherence was lowest for buzz-favourite play activity, role play and practice with puppets setting up role play.

6.4 Discussion

The IY intervention for the Changing Lives initiative was designed to be delivered at a slower pace than is typical for parent programmes in the countries of interest. Comprising 20-sessions, the aim was to give more time to focus on teaching parents relationship-enhancing and limit-setting strategies to use with their children. When parents learn behavioural management, they acquire new skills and strategies to help their children in different situations and contexts, including in the home, at school and in social relations too. The results from this intervention confirm that for parents of children at risk of ADHD, learning new skills and practicing them takes time and considerable effort, but is beneficial for both. Our findings point to high levels of satisfaction among parents concerning what they learnt both week-on-week and at programme end. This was also reflected by the high completion rates for parents attending programmes. Defined as missing no more than 5 sessions, of 154 families who signed up for programmes in Louth, 87% completed, while for Belfast 73% (n=261) completed, and in Scotland 75% (n=55) completed.

Our findings suggest that in this implementation the minimum video vignettes were not utilised by facilitators in any of the sites. Facilitators made use of around half of vignettes available to them, of which approximately two thirds were recommended minimum vignettes. Specifically, 43.8% of vignettes were utilized in Louth, including 58.9% of minimum recommended vignettes, 54.3% in Belfast, including 73.7% of minimum recommended vignettes, and 44% in Scotland, including 69% of minimum recommended vignettes. Our findings also suggest that programme adaptations occurred to accommodate the needs of parent groups. Changes such as these represent the tension between adaptation and fidelity of evidence based programmes (Aarons, Miller, Green, Perrott & Bradway, 2012; Escoffery,

Lebow-Skelley, Haardoerfer et al. 2018). It has been argued that to deliver IY programmes with fidelity, group leaders must understand four principles: 1) mediating and discussing the required number of vignettes; 2) rehearsal intervention techniques, for example role plays, brainstorming, and assigning home activities; 3) collaboration and parent involvement, for example group support, weekly leader and buddy phone calls; and 4) making informed adaptations to match the needs of the group and the barriers they may encounter without affecting programme fidelity (Webster-Stratton & Reid, 2010).

Our qualitative analysis suggests that in this implementation, programme adaptations were informed by the needs of participating families. Many had histories of multiple types of vulnerabilities, such as depression, lone parenting and poverty in addition to parenting skill deficits. We found facilitators' efforts to support parents were often over and above that outlined in the IY manual. Parents received two phone calls from facilitators twice a week during their programme. The first was a "catch-up" to allow parents to talk about any problems with implementing activities at home. The second was a recap of the current topic for group discussion and was intended to keep parents focused. Facilitators also delivered sessions on a one-to-one basis to parents who missed a session, often travelling to the participant's home. This approach was intended to build a support system around parenting issues like dis-organised daily routines in the home that might otherwise cause a parent to drop-out or not to actively engage with the programme, for example take part in interactive elements or complete 'home-work' assignments etc.

Facilitators also recognised the impact of situational barriers for parents, including childcare problems and inconvenient timings. They responded in different ways including trying to facilitate parents who needed to take a child with them to some sessions. Many programmes provided by community sector partners were offered in the evenings so that parents could share childcare responsibilities. In addition, while some facilitators recognised the need for childcare, it was beyond the scope of the project to pay for it. Childcare affordability remains a contested issue in each of the partner countries, and is a recognised access barrier for providers of parent programmes (Koerting *et al.* 2013; Hackworth, Matthews & Westrupp *et al.* 2018). In the last decade, the cost of childcare has become considerably more expensive. Childcare costs currently make up a significant proportion of many working parents' outgoings. For those on the lowest incomes, such as lone parent households, it can take up to two-thirds of their income (OECD, 2020). The dilemma for community projects considering childcare is associated with concerns around sustainability. Specifically, adding in the cost of childcare significantly increases the cost per head of parent programmes, making it more difficult to secure funding when project funding ends.

Our qualitative analysis suggests that the decisions by facilitators around which video vignettes to use were also made with the needs of groups in mind. In some cases facilitators noted that the video vignettes were dated and at times culturally difficult to relate to parent groups because they were based on scenes from American families. Facilitators pointed out that it was not always necessary to play the full video vignette to complete all tasks in a session. This is supported by our findings which show high completion rates for the tasks associated with video vignettes. Specifically, in Louth, 93.8% of tasks were completed, for example, review group list of behaviours want to see less of and establish positive opposite; role play the play skills using academic and persistence coaching; and talk about modelling self-praise.

In Belfast, 84.9% of tasks were completed, for example, encouraging words to promote child's self-confidence; review and elicits reactions and experiences to praise and reward concepts; and brainstorm benefits and barriers to ignoring. In Scotland, 80.21% of tasks were completed, with full completion in such tasks as brainstorm benefits of parent/child play; practice the play skills using descriptive commenting and no questions; and role play the play skills using academic and persistence coaching.

These promising results support calls for greater cross sector collaborations as a means of addressing the needs of local communities (Erickson & Andrews, 2011; Collins-Camargo, Armstrong, McBeath, Chuang, 2013; Department of Health, 2018). In addition, while our findings show EU reporting requirements can be heavy for small to medium sized organisations, they also draw attention to the crucial role of EU funding programmes, Interreg funding in particular, in enabling cross-sector collaborations. The ongoing challenges linked to Brexit¹ have been brought into sharp focus because two of the partner organisations are drawn from the island of Ireland, one from either side of the border. In both jurisdictions, funding from the EU has been important in dealing with the legacy of the Troubles, and this has been made easier by EU membership of both the UK and Ireland (Jeannier, 2019). European funding has not only enabled cross-border collaborations, but has been a means of maintaining cross-border relationships. With the UK and the EU transition period now ended, The Changing Lives initiative is one of the last cross-border project in ADHD between Ireland and Northern Ireland. The learning from this partnership and legacy of the cross-border framework created is therefore an important area for future research.

6.5 Conclusion

ADHD is a serious public health issue affecting a large number of children. It impacts on many aspects of the child's life, including academic difficulties, social skills problems, and strained parent-child relationships. Usually first diagnosed in childhood, it often lasts into adulthood and is associated with substantial long-term depressive outcomes. Thus early interventions that target children at risk for ADHD is believed to offer the best chance of improving both educational attainment and social functioning (Feil, Small and Seeley et al 2016).

The effectiveness of IY programmes has long been demonstrated in RCTs and meta-analyses confirming positive outcomes for both parents and children. What is much less known is how programmes work, the planning and delivery of interventions, and the contextual factors that can help the interpretation of outcome results. This report presents much-needed information on the processes behind the IY intervention delivered by The Changing Lives Initiative in Ireland, Northern Ireland and Scotland. Drawing on data gathered from parents participating in programmes and those involved in managing and delivering them, the findings from this report provide a timely insight into programme planning and the steps

¹ On 23rd June 2016 voters in the UK decided in a referendum to leave the European Union. The subsequent negotiations with the EU become known as 'Brexit'

taken to strengthen and broaden fidelity, as well as the role of cross-sector partnerships in meeting the needs of local communities.

It is increasingly recognised that addressing pressing social issues requires the capacity to work collaboratively across sectors and borders. The partners in The Changing Lives Initiative were drawn from the public and community sectors, with each having distinct strengths that they drew on to work with local communities and with Project Partners. For the community sector partners this included flexibility of working and structures, which meant that parents benefited from programmes delivered outside of standard working hours in the evenings and, in some cases, over weekends. For the statutory sector partner, facilitators often knew the families through previous child health programmes. This prior knowledge of the families meant that facilitators had a strong starting point for engaging with families and delivering programmes locally. Beyond this, the diverse project team also served to promote the exchange and transfer of knowledge, in turn strengthening fidelity of the implementation in diverse settings, with key staff working across the jurisdictions. The growing confidence of partners in working across borders also extended to programme delivery in the latter stages of the project, with programmes offered to parents on a cross-border basis to improve parents' access in Ireland/Northern Ireland.

Our findings suggest that the core components for this successful partnership were shared values, shared protocols and a shared vision. For the partners in The Changing Lives Initiative, the vision was based on a prevention approach, starting with support for the most important building block in a child's life – the family – but also including schools to further strengthen the structures needed for intellectual and social-emotional development. Across the three jurisdictions staff engaged with local communities and services, building capacity and relationships with local stakeholders. This type of cross-sector partnership has, at a broader societal level, been seen to have the potential for welfare-enhancing systemic change in sectoral relationships and societal values and priorities (Austin and Seitanidi, 2012).

Some difficulties were however noted, including differences in software requirements for using video web platforms when moving to remote delivery during Covid-19 restrictions and slow systems for reimbursement of programme costs to facilitators. While these did not represent a barrier to implementation, it was a source of stress for some facilitators. In addition, while there are many benefits in using existing staff to carry out facilitator roles, such as cost savings linked to recruitment, improved productivity, and career development opportunities, there does need to be a backup for when staff are moved again at short notice. Project partners also found the reporting requirement from SEUPB particularly onerous, with long turnaround periods between the submission of claims and payment, causing serious financial stress.

The findings from this research also point to very high levels of participant acceptability of the ADHD-focused Incredible Years Parent Training Programme. Incredible Years parent programmes tend to be provided over 14 weeks. In offering 18-20 sessions, the project aimed to give parents time to practise the skills they were learning. Previous research has highlighted the tension in families stemming from hyperactive behaviours of children with ADHD. A longer programme thus gives parents time to learn how to be with their child in a

positive way. Likewise, it gives facilitators time to focus on areas where parents need support the most. Parents felt supported by facilitators and their fellow parent participants, including between sessions if they needed additional assistance. The combined effect on parents included increased feelings of wellbeing, better relationships, and thinking positively about the future. On completion of programmes and six months' post programme, parents felt confident and positive about their ability to manage their child's behaviour and the everyday situations that had challenged them and that had been a source of stress for the family.

DRAFT

**Economic Evaluation:
Methodology, Results,
Discussion & Conclusion**

7 Economic Evaluation

7.1 Introduction

A cost analysis was undertaken to estimate the financial costs involved in delivering The Changing Lives Initiative and to explore if there were differences in resource utilisation (relating to health, social care and education) before and after engagement with the programme. Data on the cost of providing the programme were collected using cost diaries completed by programme facilitators. Staff documented time spent in a range of activities such as programme preparation, direct contact with children and families and administrative and management activities. This data was supplemented with a time-and-motion study exploring the time required to undertake screening for traits related to ADHD (by complexity of presentation) by the educational psychologist at screening events. The cost of providing the programme comprised costs associated with identifying suitable programme participants and screening activities, and the subsequent delivery of ADHD focused Incredible Years Parent Training Programme. For all three jurisdictions, the cost of programme delivery was commensurate (or lower) than that reported elsewhere in the literature, furthermore forensic examination of costs identified areas where efficiencies could be made going forward.

To estimate differences in resources used prior to and after the programme, a service utilisation questionnaire was completed by families at three time points – before the programme began (T1), on completion of the programme (after delivery of the ADHD focused IY parent programme) (T2) and approximately 6 months after enrolment onto the programme (T3). Consumption of health and social care resources was collected using the Client Service Receipt Inventory (CSRI; Beecham and Knapp, 2001), with the addition of supplementary questions relating to use of educational resources (such as classroom assistants and special educational needs co-ordinator time input). Analysis of the resources deployed provided useful information relating to the primary cost drivers in this population. Although no differences in health and social care related costs were apparent, investment in early years interventions may take many years to materialise, which in the absence of a longer follow-up period are difficult to document.

Objective

The objective of this study was to estimate the financial costs involved in delivering The Changing Lives Initiative and to explore if there were differences in resource utilisation (relating to health, social care and education) before and after engagement with the programme.

7.2 Methods

Estimating the cost of providing The Changing Lives Initiative Programme

Information on the resources involved in delivering The Changing Lives Initiative was collected using tailored cost diaries which were completed by all categories of staff involved in the delivery of the programme (such as facilitators, psychologists, managers and administrators). Information was collected on a) the resources spent recruiting and screening

participants for inclusion to the programme; and b) resources related to delivery of the programme (e.g. staff cost relating to the preparation and delivery of the programme, and costs relating to the provision of course materials, travel, venue and hospitality costs). Time input from psychologists in screening children was further supplemented with data from a time and motion study. No protocol related costs were included.

A number of reasonable assumptions were applied relating to the skill mix of staff involved in the delivery of the programme; staff salaries were mapped onto equivalent health and social care salary scales. Nationally representative unit costs from the '*Unit Costs of Health and Social Care*' published by the Personal Social Services Research Unit (PSSRU) for 2018 were applied to data from Northern Ireland and Scotland. For Irish data, unit costs were constructed based on guidance from the Health Information and Quality Authority (HIQA) on resource valuation (HIQA, 2019).

Estimating Health, Social Care and Education Related Costs

Consumption of health and social care resources were collected using the Client Services Receipt Inventory (CSRI) (Beecham and Knapp, 2001) with the addition of supplementary questions related to use of education resources (such as classroom assistants, special educational needs co-ordinators etc.). Data on twenty-nine resource use variables were collected, relating to community health services (including primary care), hospital services, specialist mental health services, social care and services provided by voluntary sector agencies. Data were collected at the beginning of the programme (T1), on completion of the programme (T2) then approximately 5-6 months after completion of the programme (T3). Analysis of cost data collected using the CSRI and education resources questionnaire were limited to Belfast cohort, due to funding constraints.

Health and social care unit costs were obtained from the '*Unit Costs of Health and Social Care*' published by the Personal Social Services Research Unit (PSSRU). Costs related to education, mental health services, needs assessments, and other support services provided by the voluntary sector were constructed from a variety of nationally published sources and engagement with professional bodies (e.g. Department of Health). All costs are presented for 2018 (the most recent published unit costs available) and as the duration of the study (by participant) was no longer than 12 months discounting of costs to present value was not necessary.

7.3 Results

Estimating the cost of providing The Changing Lives Initiative Programme

In all three jurisdictions, the key cost driver was staff time (with travel, hospitality, venue fees and course materials accounting for less than 10% of overall cost). Based on the number of families completing the programme and incorporating psychologist screening time input (based on the proportion of screening categorised as straight-forward, minor or complex) and assuming the psychologist was involved in 25% of cases across all jurisdictions), the cost per family completing the programme in each jurisdiction is:

Northern Ireland	€1,555.42* (£1,372.75)
Scotland	€1,428.84* (£1,261.04)
Ireland	€1,155.09

*converted using the 'CCEMG – EPPI-Centre Cost Converter' for 2018 from UK sterling to euro Ireland <https://epi.ioe.ac.uk/costconversion/default.aspx>

To assess the robustness of the cost per family completing the programme a range of sensitivity analyses were performed, where values of key variables and assumptions were varied across a plausible range of values and scenarios to explore their impact on cost. Results remained robust to changes in salary midpoints for a range of categories of staff and assumptions regarding the costs of venues and hospitality. Factors which impacted most on the 'cost per family completing the programme' was varying the assumption that 25% of participants screened involved a psychologist and the retention of families within the programme.

Estimating health, social care and education related costs

For the Belfast cohort, complete data were available for 91 participants at baseline (T1), 50 at time period 2 (T2) and 21 at time period 3 (T3). As no control group was available, the cost analysis explores differences in costs for time points T2 and T3 compared to baseline (T1). No statistically significant differences in costs were detected for health and social care costs at either T2 compared to baseline or T3 ($p=0.959$ and $p=9.14$ respectively). Education costs were significantly higher ($p=0.043$) compared to baseline at T2, however this was not apparent at T3 ($p=0.202$).

Table 32: Health, social care and education related costs

	T1 (n=91)		T2 (n=50)		T3 (n=21)	
	Mean cost (SD) £	Median cost (IQR) £	Mean cost (SD) £	Median cost (IQR) £	Mean cost (SD) £	Median cost (IQR) £
Hospital	266 (589)	0 (0-320)	211 (316)	0 (0-320)	282 (355)	134 (0-584)
Community health	180 (289)	95 (37-203)	178 (217)	111 (41-220)	144 (175)	74 (55-150)
Mental health	55 (180)	0 (0)	116 (303)	0 (0-50)	96 (249)	0 (0-40)
Social Services	18 (75)	0 (0)	106 (523)	0 (0)	0 (0)	0 (0)
Voluntary sector	16 (64)	0 (0)	15 (67)	0 (0)	2 (8)	0 (0)

Total health and social care costs	535 (804)	250 (79-601)	625 (1071)	256 (109-718)	524 (606)	215 (160-739)
Education costs	358 (1164)	0 (0-48)	759 (2139)	0 (0-67)	1017 (1898)	8 (0-96)

7.4 Discussion

Estimating the cost of providing The Changing Lives Initiative Programme

The results of the sensitivity analysis suggest that the ‘cost per family completing the programme’ was robust to changes in assumptions regarding staff time input and the mid-point salary estimate used and across a range of realistic values. Consistently achieving these figures in each jurisdiction in practice will be dependent on achieving similar uptake and throughput figures (i.e. steady state delivery). As the assumptions used for the analysis were conservative (taken from a real-life delivery setting rather than a clinical trial environment) there is no reason to assume that if complemented with appropriate quality assurance processes this figure could not be replicated consistently in routine practice or even reduced.

Other factors which could reduce the ‘cost per family completing the programme’ relate to maximising throughput and retention. This could be addressed through the greater use of social media to advertise and book families in for screening events and providing crèche facilities to enable parents with other young children to attend the programme. Such recommendations have the potential to improve retention figures.

Our findings are comparable to results from other evaluations which have sought to determine the cost of delivering parenting programmes in a community setting. In 2017, Gardiner and colleagues explored the scale up of parenting programmes using a meta-analytic approach (i.e. pooling raw cost and effectiveness data from five large randomised controlled trials (RCTs) an approach considered to be the strongest level of evidence on which to guide practice decisions). They reported that the average cost of delivering the intervention for the pooled sample was £2,414 (2014 prices). This value was twice the previous ‘best estimate’ of £952 (2009 prices) (it should however be noted that the latter figure is a median rather than a mean cost). Their estimate was however in line with that produced by Edwards and colleagues (2016) of £1,934 for the delivery of the IY programme in a Sure Start environment (once inflation was accounted for).

Evidence on the cost of providing the IY parenting programme in Ireland report findings of a similar magnitude to ours. O’Neill et al (2013) reported a cost of *€1,463 per client*, reporting that direct wage costs accounted for over 90% of total cost. Factors which impacted most on the cost per family completing the programme related to throughput and retention

Estimating Health, Social Care and Education Related Costs

In the absence of a control group we are unable to comment on whether the intervention is cost saving. However, data in Table 32 presents useful information regarding deployment of resources. Cost data (as would have been expected) was skewed with resource use being

greatest for a small number of children. No statistically significant differences in cost were observed for health and social care costs, although educational resources used were significantly higher at the end of the programme, but not by 6 months after enrolment. Many early intervention programmes have reported a time lag in investment and return on that investment (Allen, 2011). This observation has prompted the use of a reduced discount rate when undertaking economic evaluations for preventative and/or public health interventions, in for example, the NICE reference case. Furthermore, the longer timescale required to demonstrate a return on social investment for early years interventions would suggest a follow-up period is required.

7.5 Conclusion

The cost per family completing The Changing Lives Initiative programme are comparable to other evaluations which have sought to determine the cost of delivering parent programmes in a community setting. Indeed, given that this is a 20-session programme, the costs may be considerably less than similar interventions, which are typically 14 weeks.

The findings from our cost analysis do not show differences in health and social care related costs. However, early childhood investments unfold over time, often taking years for the cumulative benefits to exceed the up-front costs, and would therefore require an evaluation over a longer period. From an economic perspective, the benefits of early childhood investments often take years for the cumulative benefits to exceed the up-front costs (Cannon, Kilburn and Karoly et al. 2018). This is because the major source of benefit only begins to accumulate after the child reaches adulthood and enter employment. Thus, it is not surprising that the findings from our cost analysis did not show differences in health and social care related costs.

8 Delivery during COVID-19 restrictions.

In March 2020, the COVID -19 pandemic brought changes to how The Changing Lives Initiative continued to support families with children displaying behaviours consistent with ADHD. Information and Awareness workshops for both practitioner and parents/caregivers were moved online and extended, with more emphasis on effective strategies to support children's behaviour and the delivery of the ADHD IY Parent Programme also moved to online/remote delivery via Zoom and other platforms.

In March 2020 all face to face IY programme delivery came to a halt for all three delivery partners in Louth, Greater Belfast and Argyll & Bute, although all teams continued to support families individually with phone calls and resources; and the Belfast team continued to deliver programme content via telephone each week and emailing weekly content to participants. From Summer 2020 the delivery teams resumed programmes exclusively via remote delivery, first with a pilot of remotely delivered ADHD IY Parent Programme by the Louth team over the Summer months and then with a small round of programmes across the three sites delivered from Autumn 2020 through to early 2021 (Belfast 3 programmes; Louth 1 programme; Argyll & Bute 1 catch up programme for participants who hadn't been able to finish out face to face programme and 1 new programme).

Families that had completed the Louth programme (n=8) and the three Belfast programmes (N=22) were invited to take part in the evaluation. The Scottish programme was still underway and so not eligible. The participants in the Louth programme had previously completed three sessions by March 2020 when halted, so this group of participants had some experience of face to face participation and were able to compare both modes of delivery. Adaptations to IY programme for remote delivery.

A few key changes to delivery of the ADHD IY Parent Programmes were made for remote delivery mode based on advice from IY mentors and the programme developer and included a reduction of session duration from 2.5 to 1.5 hours long. Programme materials were posted when office access was possible or emailed to participants and weekly telephone calls by facilitators to participants were extended when needed to allow for additional support arising. There was also a reduction in the number of vignettes shown per session to reflect the overall reduction in session time.

8.1 Understanding Remote participation in Incredible Years Parent Programme.

In order to understand more about remote delivery of the ADHD IY Parent Programme from the participant perspective, all those who had taken part in the four Zoom programmes across the Greater Belfast and Co Louth Border region sites were invited to either an online (Zoom) focus group with the programme psychologist and local coordinator, or invited to give feedback on their experiences participating in the programme remotely during a routine follow up call, again with the psychologist after the programme had ended. A short semi-structured interview schedule was used to focus conversation on key areas of interest: participant perspective of remote mode of delivery; group work processes and connection

with others; ease of participation; acceptability of remote participation and additional general questioning around effectiveness of the programme. Additional consent to use this feedback in reports etc. was requested and given by 23 participants. One focus group was held remotely (n=4) but most participants opting to give feedback during their one to one call with the psychologist (n= 19).

‘Into the unknown’: A new way of participating- online

Over half of participants (n=13) across both delivery sites, mentioned feeling nervous or hesitant about using Zoom for the first time to take part in the ADHD IY Parent Programme. Some of their worries related to sharing personal information with a group of strangers; their appearance on screen, and for some of those who had taken part in a few face to face sessions before lockdown, there was a worry that the programme wouldn’t feel the same online. These nerves though faded after a few sessions with some mentioning they got used to the mode of attending. A few participants (n=3) reported that the facilitators worked hard to include people and provide opportunities to ‘mix’ in e.g. break out rooms and an introductory session at the beginning. The break out room facility on the Zoom platform was overwhelmingly well received by participants with most (n=14) mentioning that it gave them the chance to get to know people better in smaller groups and at times catch up with them. Some mentioned though that these break out times weren’t very long and there was an occasional tendency to wander off topic with personal conversations (n=3). All agreed though that they were a great tool to build group cohesion and those participants who felt shy or hesitant speaking in the larger group felt at ease to speak during small group work in break out. A few participants from the Louth programme who had met face to face first before moving online months later (n=3) reported that participation was comparable when moved online, despite worries it might feel very different. One parent from the Louth group though preferred meeting face to face although still felt the remote programme was a good alternative given the circumstance.

Ease of online participation

Participants were asked if it was easy to take part in the Zoom programme and whether there had been any hassles or challenges such as technology failing. Very few participants mentioned having issues with connectivity (n=2) with most reporting that sessions ran well without technical glitches. All participants found Zoom to be a convenient way of participating since they weren’t required to leave home to take part. Some participants (n=6) said that they preferred remote delivery as it worked better with their lives. They specifically mentioned that remote delivery meant they didn’t need to find childcare while taking part (n=5) and didn’t have to factor in additional time to travel to and from a designated venue. This was of particular importance to those without personal transport who reported they would have struggled to maintain regular participation over 20 sessions had it been delivered face to face. Other participants also reported that they would not have been able to take part in face to face programmes because they worked full-time and often programmes ran during the day when they weren’t available. A few participants (n=2) mentioned though that on occasion participation from home could be challenging as home was busy and children needed their attention during sessions. However, these were not regular occurrences. Most parents were able to manage these competing tasks to participate fully online. All in all, there was an overwhelming consensus that Zoom delivery of the ADHD IY Parent Programme

made participation much easier. The ease of participation was most likely also facilitated by the reality of lockdown. Families were confined to the home for most of the day and weekly activities that would normally happen outside of lockdown restrictions and would compete with participation e.g. children attending sport/social activities or after school clubs, commuting to and from work, social engagements etc. were all on hold too.

Additional Support during the programme

Of the participants who received weekly phone calls from their programme facilitators, almost all (n=16) emphasised the value of these for e.g. one to one support, trouble-shooting issues they might be having while practicing strategies or just having someone to listen to them if it has been a tough week. It was also an opportunity to share things they may not have been comfortable sharing in the group session. A few participants (n=2) also mentioned the calls helped them stay accountable in practicing strategies at home, although this was never a pressure.

Most participants reported that lockdown restrictions had been incredibly stressful on them and the family, and some (n=3) reported experiencing increased stress having to balance home schooling, children at home/indoors for longer periods of time and for some, all while holding down jobs or managing as single parents. Most reported increases in their child's challenging behaviours and in some cases increased anxiety as a result of lockdown. A few participants (n=4) reported that they themselves felt very isolated. A few participants noted that taking part in the weekly sessions and receiving the call from facilitators was so welcome because there was no other support available during this time and contact with friends and family was limited because of restrictions. 'WhatsApp' groups were also set up by facilitators for each group of participants as a way for parents and facilitators to connect and share relevant tips etc. during the week. Some participants (n=4) mentioned this addition was welcome as it provided a connection to others and a way of sharing successes or challenges during the week, in between sessions.

All felt the remotely delivered IY programme was well facilitated and planned and the key learning tools of IY such as vignettes, small group work (using Zoom break out rooms) and role play were all possible. While some participants mentioned they felt positive about the use of vignettes and small group work during the online delivery, some felt that role plays did not translate well to remote delivery and some mentioned a dislike of role play because it was contrived and they felt self-conscious (n=3).

Participants felt they bonded well with their facilitators and the other participants in their group. Some had been surprised about this since they weren't meeting face to face but all reported they felt at ease to talk about their child and family in the group and they felt supported because they realised they weren't the only one experiencing the difficulties and challenges in parenting (n=8). The other participants in the group had children just like theirs which came as a relief to most, since they often felt other parents they knew weren't experiencing the same behaviours as they were. This common experience provided the foundation for feeling safe to share without being judged, which for some was a new experience and a very welcome one.

Success with IY strategies

Participants reported the use of IY programme strategies as successful for the most part, with a few (n=7) specifically mentioning key tools like ignoring unwanted behaviour while praising wanted behaviour were very successful. Other strategies used successfully included child-directed play (n=4) and persistence coaching (n=2) was particularly useful for home schooling activities which were often a difficulty for parent and child during lockdown. A few participants also felt their one to one support of their child during lockdown and use of persistence coaching benefited their child's learning greatly (n=2). A few parents struggled using Time Out (n=4) as a strategy and one found that reward charts didn't seem to work well with her child.

Changes for the better

Some participants reported changes to family life as a result of taking part in the programme including how the programme increased their confidence, awareness and ability to cope with parenting their child (n= 11) and how the programme taught them about their own behaviour and its impact on their child (n=3). This increased knowledge and confidence in being able to handle their child's behaviour in turn had a positive impact on parent-child relationships. Some participants mentioned that other family members not taking part in the programme were supportive of their participation and keen to learn each new strategy as well so they could implement it too. Most participants were mothers but mentioned that because of remote delivery, fathers would often join in when available. The sharing of programme materials also helped other key individuals to support the consistent implementation of strategies for children. This extended to teachers, grandparents and older teen siblings in some instances (n=5). They also reported improved family functioning in terms of positive changes in parent child relationships but also a few mentioned improved communication between partners about parenting (n=2). A few participants felt the programme had changed them as an individual for the better and had helped them feel better than they had in a long time (n=2). Some participants also reported that the change in their child and their family was noticed by other family members and friends who wanted to know more about the strategies that had worked (n=4).

Recommending the programme to others

Participants, when asked if they would recommend taking part remotely in IY to other parents all agreed they would do so, with some adding that it gave them hope that change was possible; the programme gave them something to work on while they waited for their child to be assessed for ADHD. Other related feedback was that the programme was applicable to any parent and there was great advice given through the programme from others taking part as well as facilitators.

8.2 Conclusion and Recommendations

The remote delivery of the ADHD IY Parent Programme was overall well received by participants suggesting a high level of acceptability for this mode. The decision to offer the programme via remote delivery was considered and guided by the continued demand for ADHD specific parent strategies to families in Ireland and the UK and a recognition that the

unique situation of COVID-19 restrictions and lockdown actually placed more strain on families than usual with additional time spent confined to home, home schooling, working from home, spending time apart from support systems (e.g. extended family, groups, friends). The robustness of the IY programme structure and format lent itself well to being translated to the online format, although some key adjustments were implemented based on anecdotal evidence of remote participation and delivery, and the wisdom and expertise of IY mentors and the programme's developer (reduction in time, vignettes used during sessions etc.). A full understanding of differences between programme content delivered via online and traditional face to face delivery and its impact on outcomes is worth exploring for future research.

A few key recommendations for any future remote delivery emerged based on participant feedback. There was variation in the level of telephone support taken up by participants across delivery sites and feedback from participants availing of these calls each week reinforced their importance for: building rapport between facilitator and parent; troubleshooting issues with experienced group leaders, and feeling supported for specific individual issues/situations. It could be suggested that these calls also served to increase programme dosage as group based participation time had been decreased when cut from the usual 2.5 hours to 1.5 hours for remote mode of delivery. Another key issue is the importance of parents having hard copies of programme materials as many could not access a printer at home. Establishing a protocol around these specific factors in remote delivery, would be helpful for multi-site delivery of the ADHD IY Parent Programme.

9 Strengths and Limitations

The Strengths and Limitations of the Project Evaluations included:

- The use of valid and reliable measures of child behaviour and the collection of outcome data from participants at regular intervals throughout the study including 6 months and 1 year post programme.
- A comprehensive and detailed implementation and process evaluation to explore the mechanisms of change and implementation processes (including identification of potential barriers to implementation and ways to address them).
- A cost consequence analysis to better understand the associated costs and resource utilisation associated with engagement in the programme, with the potential to inform service planning and provision as well as long term sustainability.
- Participating families in this project came from a range of backgrounds reflecting a cross sector of local communities. Families participating included those with socio economic risk factors e.g. low income, poor educational attainment, lone parents and minority ethnic status, as well as families who were employed, had good incomes and stable family background. The mix of families worked well and presented few problems indicating the applicability of the programme across communities.
- Without a control group, we cannot report whether it was the intervention or some other variable that caused the outcomes of the intervention. This was however never our intention. The IY programme has been used extensively and studied internationally both as a treatment and as a preventative strategy for behavioural problems in children, providing ample evidence of its outcomes. Our intention was rather, to pilot The Changing Lives Initiative programme under real-world conditions and with samples reflecting local communities, something which is increasingly recognised as important and novel.
- Attrition rates from baseline to follow up was high, but this is not uncommon in such interventions. Previous research has found that attrition rates have been as high as 60% in some cases (Michael, 2018). The richness of data gathered from participants in this study provide valuable insights into how The Changing Lives Initiative programme was experienced by families and the aspects of their lives that benefited most from support. This not only included relationships with children and service providers but positively impacted everyday situations that had previously been a source of stress for the families, providing valuable opportunities for learning for policymakers and practitioners.

10 Concluding Thoughts

The Changing Lives Initiative evaluations have provided much evidence and learning in terms of the effectiveness, cost effectiveness and implementation of a community-based early intervention programme to address the growing prevalence and impact of ADHD in Northern Ireland, the Republic of Ireland and Scotland. The findings in this report provide compelling evidence for the potential of a specifically designed ADHD parenting programme with tailored ADHD Information & Awareness Sessions for parents and professionals to achieve lasting change for families whose children experience behaviour consistent with ADHD.

The Changing Lives Initiative programme brought about qualitative improvements to children's behaviour by reducing the frequency, intensity, duration and severity of problem behaviours, the impact of which extends to the day-to-day functioning of the child and their family. The programme not only reduced challenging behaviours but built important social and emotional regulatory skills. Even parents whose children experienced limited change in ADHD symptomology, still viewed the participation and process as successful. Parents reported the importance of the support they received from other parents in similar situations, and increased coping skills and awareness to explain this feeling of success.

Improvements in parent-child relationship were widely reported as well as improved functioning in family relationships, including parent-to-parent and child-to-siblings. There was a significant reduction in levels of stress experienced by parents as well as negative patterns of interaction between parent and child. ADHD is a disorder characterised by persistent and impactful behavioural patterns that affect a child's experience of the world as well as affecting how the child is viewed by their world. The project at its core offered tangible skill development to parents, which gave them the opportunity to be active participants in their child's treatment.

It is evident from the evaluations that the project would not have been possible without a strong foundation of cross-sector partnerships, relationship building and cooperation. Partnerships brought strength and added value across all aspects of the project – including within families, as well as parent-to-parent, facilitator-to-parent, and among Project Partners, schools and those involved in children's lives including agencies and services best placed to identify families in need of the intervention.

Training, support and fidelity measures were used extensively throughout the project to ensure the quality of The Changing Lives Initiative programme. It was, however, also key to the success of the project to provide appropriate flexibility and autonomy in the delivery of the programme to adapt elements to suit the target population and differing situations. The project worked with a target population with specific and often complex needs and relied on the skills and expertise of facilitators to engage parents considered 'hard to reach'. A key function of the project was ensuring that Programme Facilitators had appropriate experience, skills and support to make informed adaptations to match the needs of the group and the barriers they may encounter, without affecting programme fidelity.

Information and Awareness sessions for professionals, such as early years providers, teachers and allied health professionals, were well attended and requested throughout the project. The Changing Lives Initiative trained in excess of 1,700 professionals against an anticipated target of 500. This highlights the need for increased knowledge of ADHD and effective

strategies, among a wide range of practitioners. These Information and Awareness sessions continued to grow in popularity when moved online, when there were no geographical barriers to attending.

In response to the COVID-19 pandemic, the well-structured IY programme content and training techniques translated effectively to remote delivery via Zoom. Parents completing the programme through Zoom reported high levels of acceptability, demonstrating a very viable alternative to face-to face delivery during Lockdown restrictions.

10.1 Recommendations and Areas for Further Study

There is much that needs to be done to improve the lives of families with children at risk of ADHD. The findings from this study suggest the following recommendations:

- Early interventions that target children at risk of ADHD in preschool/primary school offer a potential avenue for improving educational and social functioning of vulnerable children. Long-term support is needed for intersectoral and interagency collaborative planning and service delivery targeting early intervention for children at risk of ADHD and their families.
- There is a demand for focused information, awareness and training in effective strategies to target the behaviours associated with ADHD in childhood but also for adolescents. This demand extends beyond the geographical areas of the three delivery partners. There is also demand across a diverse range of professions, including education, allied health, early years, medical and psychological services. It is recommended that a needs analysis be conducted assessing gaps in knowledge and requirements per profession to support children, young people and their families.
- There is a need for longitudinal research to better understand the costs and benefits of early interventions programmes and to ascertain whether such approaches can improve long term outcomes in ADHD. The learning from this partnership and legacy of the cross-border framework created is therefore an important area for further research.

10.2 The case for scaling up The Changing Lives Initiative

The Changing Lives Initiative approach is heavily aligned with current health and broader government policy in all three project jurisdictions. It fits well with current policies in terms of early intervention; empowering and supporting parents and communities; ensuring best outcomes for children; and complementing and optimising current resources and infrastructure.

The Changing Lives Initiative project and its evaluations have added to the body of evidence supporting the effectiveness of early and psycho-social based interventions in treating / preventing ADHD, and has demonstrated the feasibility and benefits of delivering this type of intervention as a community based, multifaceted initiative.

It is well documented that families with children with behaviours consistent with ADHD lack support in the early years when behaviours are emerging that make parenting and teaching difficult. The assessment and diagnostic process across jurisdictions in this Initiative start well after the first signs of behaviours emerge. The lack of support available until this process is activated leaves parents feeling unsupported and labelled as ‘bad parents’, and their children unsupported and developing maladaptive coping strategies and behaviours, failing in school, developing poor self-esteem and feeling like the ‘naughty child’.

What The Changing Lives Initiative programme offers when targeted to support families with children whose behaviour is consistent with ADHD is the opportunity for parents to increase their skill base, meet the needs of their child, and feel supported by others coping with similar behaviours. It offers effective tools, tailored training and an intervention that does not need a diagnosis to bring about positive change.

The Changing Lives Initiative model has much to offer in terms of a review of ADHD service provision. Not only should The Changing Lives Initiative programme be continued in the current project locations but efforts must be made to scale up service provision to make the intervention available to all families that require it across the Republic of Ireland, Northern Ireland and Scotland. The results of project evaluations provide much information to inform scaling up of the intervention.

With the current COVID-19 pandemic and the additional pressure on Child and Adolescent Mental Health services, there has never been more need to look at new models of intervention, which could not only provide better outcomes for children with behaviour consistent with ADHD, but free up scarce mental health resources towards addressing the needs of other children and young people who require support and treatment.

11 References

Full references will be available in final draft

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12 Appendix

12.1 Psychometric Information

The Strengths and Difficulties Questionnaire (Goodman, 1999)

The five-factor structure of the SDQ has been affirmed in a number of independent studies in Europe (Muris, Meesters & van den Berg, 2003; Smedje, Broman, Hetta, and von Knorring, 2009) Test-retest reliabilities for the instrument scales are high: hyperactivity, $r = 0.77$; conduct problems, $r = 0.65$; emotional symptoms $r = 0.71$; peer problems, $r = 0.61$; prosocial, $r = 0.64$; total difficulties, $r = 0.77$ (Murray et al., 2010: pp num). Discriminant validity IS HIGH the SDQ as a screening tool for assessing emotional health and problem behaviour in children has been found to differentiate well between clinical and community based samples. Internal consistency is high (79-97) Convergent Validity is high for the Connors 3 and the PSI9 persons correlation .72.

The Conners Parent Rating Scale CPRS (3rd Edition) Short Form (Conners, 2008)

Internal consistency is high (.77-.97) for the CPRS (ref). Test retest reliability is high. Convergent Validity is high with the SDQ and the Conners 3 (Pearson's correlations $>.72$).

The Vanderbilt ADHD Rating Scale (Wolraich et al., 1998)

The Vanderbilt Rating Scale screening scales have adequate reliability, factor structure and preliminary evidence of concurrent validity. Internal consistency is high – the Coefficient alpha ranged from .91-.94 and a KR20 of .88-.91 (Wolraich et al, 2013; 559). Sensitivity is: (.80) and Specificity is (.75) (Wolraich et al., 2013). Concurrent Validity is good. Test Retest Reliability is high it exceeded .80 for all summed scale scores (Wolraich et al, 2013). Page numbers?

Parent Stress Index (Abidin, 1995)

Internal consistency is high for the PSI (Reitman et al 2002: pp). Test retest reliability has a co-efficient of .84 (ref).

Parent Scale (Arnold et al, 1993)

The Parent Scale been shown to correlate highly with observational assessments of parenting (Arnold et al., 1993). Internal Consistency is Adequate with good internal consistency (0.84) and is associated with behavioural observations of parenting in younger children (Arnold et al., 1993). Mothers – 0.87, 0.85 and 0.84, Fathers 0.84, 0.84, and 0.82 for the total scale, Laxness scale, and Overreactivity scale respectively thus suggesting good internal consistency of the scale (Harvey et al 200:736).