Preventing violence against children through parenting interventions – Measurements, moderators, and effects over time



Sophia Backhaus

Wolfson College, University of Oxford

Supervisors: Prof Frances Gardner & Dr Patty Leijten

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

Social Intervention and Policy Evaluation

To the children whose voices often go unheard.

Thesis Abstract

Background: Violence against children is a global phenomenon affecting over one billion children a year, with severe consequences for child well-being and development.

Parents are the primary perpetrators of violence against children. Violent behaviours of parents often occur in the context of physical and emotional disciplining, such as spanking, slapping, beating, threatening, insulting, or screaming. These violent acts by parents are assessed using a variety of instruments, but it is unclear whether these instruments measure the same or different violent parenting behaviours. Examining these instruments is crucial since the conclusions drawn from research findings and approaches to prevention rely on consistent definitions and operationalisations. This is particularly the case for systematic reviews and meta-analyses where various instruments are consolidated under an overarching outcome category. For instance, previous reviews on the effectiveness of interventions to reduce violence against children varied widely in the instruments included to measure violent parenting. While some reviews only included substantiated maltreatment cases or validated child maltreatment instruments, others included harsh parenting instruments or risk for maltreatment, producing different overall estimated effects of interventions (from $d = 0.02$ to $d = –0.42$).

Interventions that support parents have been emphasised by international organisations as one of seven global strategies to end violence against children. Parenting interventions encourage alternative non-violent behaviour management skills and promote activities to strengthen parent-child relationships. While various systematic reviews concluded that parenting interventions are an effective strategy to reduce violence perpetrated by parents, the findings were limited to short-term effects. Yet, the key interest of policymakers is whether these interventions reduce violence in the long-term. Moreover, parenting interventions are implemented across the globe, raising the question of whether families

experiencing social disadvantage equally benefit from parenting interventions. This information becomes more urgent since parenting interventions are gradually taken to scale.

Objectives: The goals of this thesis are: i.) to understand similarities and differences between child maltreatment and harsh parenting instruments; ii.) to examine the effects over time of parenting interventions to reduce violence against children; and iii.) to identify whether families that live in conditions of social disadvantage benefit less (or more) from parenting interventions to reduce violence against children.

Methods: *DPhil Paper 1* used a mixed-method approach for analysing the overlap of physical and emotional violent parenting behaviours between child maltreatment and harsh parenting instruments. For this, it used two systematic reviews to select child maltreatment and harsh parenting instruments, a thematic content analysis to identify which parenting behaviours were measured, and the Jaccard Index to quantify the homogeneity in content between instruments. *DPhil Paper 2* used a systematic review that was conducted following best practice standards including GRADE assessments and PRISMA reporting guidelines. For this, 26 databases and trial registries were searched, and screening and data extraction were conducted by two review authors. Standardised effects sizes were pooled across studies using robust variance estimation meta-analysis, which allows the inclusion of all effect sizes assessing similar constructs, and consequently reduces bias associated with the selection of effect sizes. *DPhil Paper 3* used individual participant level data of European parenting trials, and data from the systematic review of parenting interventions used in *DPhil Paper 2*. Uniquely, it utilised the strengths of these two approaches to meta-analysis to analyse differential effects based on social disadvantage factors. For this, an existing dataset of European Incredible Years randomised controlled trials was updated, and meta-regression analyses conducted on both datasets testing the same four social

disadvantage moderators: low income, low education, joblessness, and ethnic minority status.

Results: *DPhil Paper 1* found that 73% of content (i.e., parenting behaviours measured) of child maltreatment and harsh parenting instruments overlaps. All physical behaviours measured in harsh parenting instruments (e.g., spanking, beating up) were also measured in child maltreatment instruments. Unique physical behaviours measured in maltreatment instruments included, for example, twisting body parts and choking. All emotional behaviours in maltreatment instruments were included in harsh parenting instruments, and vice versa. *DPhil Paper 2* found that parenting interventions based on social learning theory reduce physical and emotional violent parenting behaviours immediately after the intervention ($d = -0.46$; 95% CI: –0.59, –0.33, $p < .001$, $I^2 = 76.66$), at 1–6 months follow up ($d = -0.24$; 95% CI: −0.37, −0.11), and at 7–24 months follow-up ($d = -0.18$; 95% CI: −0.34, −0.02), but effects were smaller over time. *DPhil Paper 3* found that these parenting interventions are equally effective in reducing physical and emotional violent parenting behaviours. Both traditional aggregate-level and individual participant data meta-analysis found no evidence that families of social disadvantage benefited more or less from parenting interventions.

Discussion: The contribution of these findings is threefold. First, this thesis shows that operationalisations of child maltreatment and harsh parenting are relatively similar, but not identical. This can help to guide discussions on definitions, operationalisations, and their consequences for research on violence against children. Second, this thesis highlights that parenting interventions based on social learning theory remain effective up to 2 years post-intervention, but effects become smaller over time. Accordingly, it calls for further research on ways to provide parents with sustained support. Third, with global policy interest and scale-up of interventions, this thesis suggests that parenting interventions

unlikely widen social inequalities. This finding is very timely given the recent recommendation from the World Health Organization to provide parents with access to these social learning theory-based parenting interventions.

Table of Contents

List of tables 9

List of figures 10

List of supplementary tables and figures 11

Abbreviations 12

Acknowledgements 14

Publications arising from this thesis 17

Declaration 19

1 Introduction 20

2 Background and literature overview 22

2.1. Violence against children 22

2.2 Parenting interventions 33

2.3 Summary and research aims 51

References 55

3 Methodology 78

3.1 Systematic review 78

3.2 Meta-analysis 80

3.3 Certainty and credibility in moderation analysis 83

3.4 Overview of methodology for each specific research question 84

References 86

4 Different instrument, same content? A systematic comparison of child maltreatment and harsh parenting instruments 90

Statement of Authorship 90

Abstract 91

Introduction 93

Methods 98

Results 108

Discussion 116

References 123

5 Effects over time of parenting interventions to reduce physical and emotional violence against children: a systematic review and meta-analysis 134

Statement of Authorship 135

Abstract 135

Introduction 138

Methods 141

Results 145

Discussion 161

References 165

6 Equity effects of parenting interventions to reduce physical and emotional violence: Individual participant data and traditional meta-analysis 181

Statement of Authorship 182

Abstract 182

Introduction 183

Methods 187

Results 193

Discussion 204

References 208

7 General Discussion 227

7.1 Overview of the DPhil findings 227

7.2 Strengths and limitations 230

7.3 Implications for research 235

7.4 Implications for policy 243

7.5 Dissemination and impact 248

7.6 Conclusions 249

References 252

Appendices 265

List of tables

Table 3.1 Summary of methodology for the three empirical chapters 85
Table 4.1. Included instruments measuring child maltreatment 102
Table 4.2. Included instruments measuring harsh parenting 103
Table 4.3 Prevalence of occurrence of thematic clusters in instruments 109
Table 4.4a. Physical behaviours included in each instrument 110
Table 4.4b. Emotional behaviours included in each instrument 113
Table 5.1. Intervention and design characteristics of included studies 148
Table 5.2. Participant characteristics of included studies 153
Table 5.3. Meta-analytic results for all timepoint categories 157
Table 6.1. Study variables and definitions 190
Table 6.2. Aggregate-level MA: Characteristics of studies in meta-analysis 196
Table 6.3. IPDMA: Descriptives of included studies 200
Table 6.4. IPDMA: Demographics on moderators, outcomes, covariates by groups 199
Table 6.5. IPDMA: Moderation effects of within- and between-trial moderators 201

List of figures

Figure 2.1 Adaptation of the coercive cycle (Patterson, 1982) 37
Figure 2.2 Potential barriers for intervention success and reactional approaches 47
Figure 3.1 Original hierarchy of evidence 78
Figure 3.2 Updated hierarchy of evidence 82
Figure 4.1. Flowchart reflecting instrument selection 99
Figure 5.1. PRISMA Flowchart 146
Figure 5.2. Summary of risk of bias assessment across studies 156
Figure 5.3. Forest plot for the immediate effect of parenting interventions 158
Figure 5.4. Forest plot for the effect at 1–6 months follow-up 159
Figure 5.5. Forest plot for the effect at 7–24 months follow-up 160
Figure 6.1. Aggregate-level MA: Forest plot on subgroup effects 195
Figure 6.2. IPDMA: Moderation of intervention effect on violence by low income 202
Figure 6.3. IPDMA: Moderation of intervention effect on violence by lower education 202
Figure 6.4. IPDMA: Moderation of intervention effect on violence by joblesness 203
Figure 6.5. IPDMA: Moderation of intervention effect on violence by ethnic minority 203

List of supplementary tables and figures

Table S4.1. List of excluded instruments 281
Figure S4.2a. Jaccard Index matrix for instruments - all behaviours 282
Figure S4.2b. Jaccard Index matrix for instruments - physical behaviours 283
Figure S4.2c. Jaccard Index matrix for instruments - emotional behaviours 284
Figure S4.3a. Jaccard Index matrix for maltreatment instruments - all behaviours 285
Figure S4.3b. Jaccard Index matrix for maltreatment instruments - physical behaviour 285
Figure S4.3c. Jaccard Index matrix for maltreatment instruments - emotional behaviour 285
Figure S4.4a. Jaccard Index matrix for harsh instruments - all behaviours 286
Figure S4.4b. Jaccard Index matrix for harsh instruments - physical behaviours 287
Figure S4.4c. Jaccard Index matrix for harsh instruments - emotional behaviours 288
Table S5.1. Eligibility criteria for inclusion 289
Table S5.2. Detailed GRADE rating 291
Figure S5.1. Funnel plot of intervention studies with effects at immediate post-test 292
Figure S5.2. Funnel plot of intervention studies with effects at 1–6 months follow-up 293
Figure S5.3. Funnel plot of intervention studies with effects at 7–24 months follow-up 294
Figure S5.4. Detailed risk of bias assessment 295
Figure S5.5. Histogram of number of effect sizes by measurement time point 296

Abbreviations

APQ	Alabama Parenting Questionnaire
BSI	Brief Symptom Inventory
CAPI	Child Abuse Potential Inventory
CCMS	Comprehensive Child Maltreatment Scale
CCNES	Coping with Child Negative Emotions
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
CTS-ES	Child Trauma Screen-Exposure Score
CTSPC	Conflict Tactics Scale Parent Child Version
DDI	Dimensions of Discipline Inventory
DHS	Demographic and Health Surveys
DPhil	Doctor of Philosophy
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
FM-CA	Family Maltreatment- Child Abuse criteria
GPBS	Ghent Parental Behavior Scale
GRADE	Grading of Recommendations, Assessment, Development, Evaluation
HDPL	Harsh Discipline Practice List
HS	Harsh Scale
ICAST	ISPCAN Child Abuse Screening Tool
IPD	Individual Participant Data
IPDMA	Individual Participant Data Meta-analysis
IPPS	Intensity of Parental Punishment Scale
ISPCAN	International Society for the Prevention of Child Abuse and Neglect
IY	Incredible Years
JVQ	Juvenile Victimization Questionnaire
LMIC	Low- and middle-income countries
MA	Meta-analysis
MAR	Missing at random

MICS	Multiple Indicator Cluster Survey
PAFAS	Parenting and Family Adjustment Scale
PARQ	Parental Acceptance-Rejection Questionnaire
PBC	Parent Behavior Checklist
PBI	Parent Behavior Inventory
PCIT	Parent Child Interaction Therapy
PICO	Population, Intervention, Control, Outcome
PMTO	Parent Management Training – Oregon
PPI	Parent Practice Interview
PPS	Parenting Practice Scale
PQ	Parenting Questionnaire
PRCM	Parental Response to Child Misbehavior Questionnaire
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PS	Parenting Scale
PSDQ	Parenting Styles and Dimensions Questionnaire
RCTs	Randomised controlled trials
RQ	Research question
RVE	Robust variance estimation
SD	Standard deviation
UN	United Nations
UNCRC	United Nations Convention on the Rights of the Child
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
WHO	World Health Organization

Acknowledgements

This thesis would not have been possible without the support of so many, of whom a few I would like to thank here explicitly.

First and foremost, I am most grateful to my supervisors, Frances Gardner and Patty Leijten. Your continuous academic guidance, relentless trust, and constant support and care have been invaluable to this DPhil journey. I feel truly lucky to have had two supervisors that always believed in me, provided me with room for autonomous working and thinking, and always stood by myside whenever I needed them. Having decided to further pursue an academic path, I can only hope that, with time, I learn from their ability to provide this extraordinary level of mentorship to my future students. Thank you to Jamie Lachman for his support during the first year of my DPhil.

I would like to thank the Clarendon Fund, the Economic and Social Research Council Grand Union Doctoral Training Partnership, and Wolfson College Oxford, for awarding me with scholarships that supported my doctoral training and research. I also thank the Department of Social Policy and Intervention, as well as Wolfson College Oxford for offering me a space to research, think, and engage with incredibly kind people.

Furthermore, I am grateful to my collaborators, G.J. Melendez-Torres, Janina Jochim, and Franziska Meinck. G.J., thank you for making me excited about the nitty gritty details of statistical analysis during our “analysis funfests”. Franziska, thank you for your contagious enthusiasm for research on violence against children. Janina, you were the first person I met in Oxford, and I am incredibly grateful for your support and friendship from the beginning to the end of this DPhil.

I would like to thank the Violence and Injury Prevention Team at the World Health Organization, particularly, Alexander Butchart, for providing with a multitude of learning opportunities on the policy implications of parenting interventions.

A special thank you to all of my friends. Rose Stevens, I am indebted to you for your incredible level of support, care, and friendship. Even in the midst of a pandemic, you were only a video call away. Thank you for hundreds of hours of joint virtual working and filling my Oxford experience with unforgettable memories.

I have had the honour to meet countless brilliant colleagues at the Department of Social Policy and Intervention that turned into close friends. Thank you to Ertuğrul Polat, Nhat An Trinh, Michelle Degli Eposti, Ali Bargu, Amalee McCoy, Anders Malthe Bach-Mortensen, Ben Verboom, Meaghan Thumath, and Alice Hawryszkiewycz.

Thank you to Pierre-Baptiste Chipault and Clara Wollburg for making Oxford feel like home.

I would like to thank many additional incredible friends who provided me with so much care, laughter, and who never let me question my ability to finish this DPhil. Thank you to Eli for 16 years of friendship, and to my wonderful Konstanz friends: Tani, Kim, Svenja, Valentina, Christoph, Matthias, Xenia, Marieke, and Marcus. Thank you to Kirstine and Emily for your invaluable support in Copenhagen.

This DPhil thesis has taught me the immense importance of growing up in a loving and safe environment. The unwavering support of my parents, Burkhard and Reinhild, is one of the greatest privileges of my life. Thank you for providing me with an environment that allowed discussion, promoted critical thinking, and always opened the doors for

strangers. Many thanks to my biological and non-biological siblings for having faith in my abilities and, partly, sharing my enthusiasm for research.

And finally, I am incredibly grateful to my husband, Omid. You were my biggest supporter, and provided me with endless encouragement and care. This DPhil journey would have not been possible without you. Thank you for having unshakeable faith in me, and for making me laugh when I most needed it.

Publications arising from this thesis

The following manuscripts arose directly (first-authored) or indirectly (co-authored papers) from this thesis:

1. **Backhaus, S.**, Leijten, P., Meinck, F., & Gardner, F. (2022). Different instrument, same content? A systematic comparison of child maltreatment and harsh parenting instruments. *Trauma, Violence & Abuse*. https://doi.org/10.1177/15248380221134290

2. **Backhaus, S.**, Leijten, P., Jochim J., Melendez-Torres, G.J., & Gardner, F. (2023). Effects over time of parenting Interventions to reduce physical and emotional violence against children: a systematic review and meta-analysis. *eClinicalMedicine*, *60*,102003. https://doi.org/10.1016/j.eclinm.2023.102003

3. **Backhaus, S.**, Leijten, P., Melendez-Torres, G.J., & Gardner, F. (in preparation). Equity effects of parenting interventions to reduce physical and emotional violence: Individual participant data and traditional meta-analysis.

4. **Backhaus, S.**, Gardner, F., Schafer, M., Melendez-Torres, G. J., Knerr, W., & Lachman, J. M. (2023). *World Health Organization Guidelines on Parenting interventions to prevent maltreatment and enhance parent–child relationships with children aged 0–17 years: Report of the systematic reviews of evidence*. https://cdn.who.int/media/docs/default-source/documents/violence-prevention/systematic_reviews-for-the-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=158fd424_3

5. Gardner, F., Shenderovich, Y., McCoy, A., Schafer, M., Martin, M., Janowski, R., Varadan, S., **Backhaus, S.**, Barlow, J., & Ward, C. (2023) *World Health Organization Guidelines on parenting interventions to prevent maltreatment and enhance parent–child relationships with children aged 0–17 years: Report of the*

reviews for the WHO-INTEGRATE framework. https://cdn.who.int/media/docs/default-source/documents/violence-prevention/who-integrate-reviews-for-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=7f96ae56_3

6. Kjølbi, J., Melendez-Torres, G.J., Gardner, F., **Backhaus, S.**, Linnerud, S., & Leijten, P. (2023). Research review: Effects of parenting programs for children's conduct problems on children's emotional problems – a network meta-analysis. *Journal of Child Psychology and Psychiatry, 64*(3), 348-56. https://doi.org/10.1111/jcpp.13697

Declaration

I, Sophia Backhaus, hereby declare that this thesis is my own work, except where otherwise stated.

Signed: 

Date: 30.06.2023

Place: Copenhagen

1 Introduction

Globally, one billion children under the age of 18 experience violence every year (Hillis et al., 2016). According to the World Health Organization (WHO) violence is "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation"(Krug et al., 2002, p. 5). Violence against children not only violates the United Nations Convention on the Rights of the Child (UNCRC), but is also recognised as a significant public health problem. Parenting interventions have been advocated as a strategy to reduce violent behaviours of parents. This thesis focuses on the effectiveness of parenting interventions to reduce violence against children. In particular, this thesis aims to i.) examine the instruments used to measure violent parenting behaviours (*DPhil Paper 1*); ii.) test whether parenting interventions effectively reduce violence over time (*DPhil Paper 2*); and iii.) investigate whether parents facing social disadvantage differentially benefit from parenting interventions in reducing violence (*DPhil Paper 3*).

This DPhil thesis is organised into seven chapters, including three stand-alone papers (Chapter 4, 5, and 6), as required by the DPhil-by-publication track at the Department of Social Policy and Intervention at the University of Oxford. Chapter 2 is a literature overview on violence against children and the effectiveness of parenting interventions. Chapter 3 discusses the overarching methodology used in this thesis. Chapter 4 (*DPhil Paper 1*) presents a systematic comparison on the content of instruments that measure violent parenting behaviours. Chapter 5 (*DPhil Paper 2*) is a systematic review and robust variance estimation meta-analysis examining the effects of parenting interventions to reduce violence against children over time. Chapter 6 (*DPhil Paper 3*) uses two complementary methods, namely traditional aggregate-level meta-analysis and

individual participant data meta-analysis, to test whether parenting intervention effectiveness is moderated by social disadvantage factors (i.e., low income, low education, joblessness, or ethnic minority status). Lastly, Chapter 7 discusses the key findings, and explores the overall limitations and strengths of this thesis. This chapter also discusses implications for policy and practice, and provides future research recommendations.

2 Background and literature overview

2.1. Violence against children

2.1.1 Historical context

"The history of childhood is a nightmare from which we have only recently begun to awaken. The further back in history one goes, the lower the level of child care, and the more likely children are to be killed, abandoned, beaten, terrorized, and sexually abused." —*deMause (1974, p. 1)*

Violence against children has been pervasive throughout history. Childhood has not always been considered as a phase of life that needs particular safeguarding and protection. Children were regarded as "small or inadequate versions of their parents" (Empey, Stafford, & Hay, 1999, pp.6–7). They were politically powerless, without independent rights, and most societies saw children as the property of parents who have full ownership and freedom of action towards their children.

The recognition of non-fatal violence against children, as an injustice problem, started with the case of the 8-years-old Mary Ellen Wilson in the United States, who faced severe physical abuse, including the use of scissors on the child's face, starvation, and neglect at the hands of her adoptive mother. At that time, there was no law that protected children from violence and abuse, despite laws to protect animals from cruelty. The case of Mary Ellen Wilson prompted the establishment of the first child protection organisation in 1875, the New York Society for the Prevention of Cruelty to Children (Katz et al., 1977). In 1880, *The Lancet* drew further attention to the ramifications and frequent practice of violent disciplining in an editorial titled "The punishment of children". It highlighted the negative consequences caused by practices such as boxing ears and smacking faces (The Lancet, 1880). In 1883, the first English Society for the Prevention of Cruelty to Children

was established (Lynch, 1985). Around the same time, Ambroise Tardieu, a French forensic physician led a child protection movement which focused on the poor working conditions of children in Europe and the subsequent emotional and physical ramifications (Labbé, 2005).

The interest in the protection from child abuse gained momentum in the publication of "The Battered Child Syndrome" by Dr C. Henry Kempe (Kempe et al., 1962), leading to increased public awareness, medical attention to child abuse, and mandatory reporting within the United States. The term *battered child* further evolved into *child maltreatment*, expanding beyond physical abuse to also include neglect, and emotional and sexual abuse. Over the next 60 years, countries began enacting legislation to protect children from abuse and neglect, with Sweden being the first country to ban all forms of physical punishment (SFS, 1979). Until the 1990s, corporal punishment was considered globally an acceptable and appropriate method to elicit child compliance; however, during that decade, a strong body of evidence emerged highlighting the links between corporal punishment and child aggression (see Durrant & Ensom, 2012). The safeguarding of children from all types of violence reached its strongest milestone with the development of the United Nations Convention on the Rights of the Child (UNCRC) in 1989. It provided a framework for the protection and well-being of children, and emphasised the importance of protecting children from any form of violence. Since its inception, the UNCRC has been ratified by a significant number of countries, and has influenced national policies and legal frameworks across the globe. In 2015, countries worldwide committed to a joint global action plan, the United Nations Sustainable Development Goals, to end poverty, reduce inequality, and protect the planet by 2030 (UN, 2015). Target 16.2 calls for an end to violence against children including "abuse, exploitation, trafficking and all forms of violence against and torture of children". In 2016, the Global Partnership and Fund to End Violence Against

Children was launched by the UN Secretary-General to support governments and organisations in ending all forms of violence against children (Global Partnership to End Violence Against Children, 2016). Yet, despite the global recognition of the harmful consequences of violence against children, and a multitude of joint efforts to protect children, violence against children persists and is highly prevalent (see *Section 2.1.5*).

2.1.2 The definition of child maltreatment

Violence perpetrated by parents is often referred to as child maltreatment. In 1999, the WHO provided a comprehensive definition of child maltreatment including "all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power" (WHO, 1999, p. 15). Physical abuse is defined as "that which results in actual or potential physical harm from an interaction or lack of an interaction, which is reasonably within the control of a parent or person in a position of responsibility, power or trust" (WHO, 1999, p.15). Emotional abuse "includes the failure to provide a developmentally appropriate, supportive environment, including the availability of a primary attachment figure, so that the child can develop a stable and full range of emotional and social competencies commensurate with her or his personal potentials and in the context of the society in which the child dwells. There may also be acts towards the child that cause or have a high probability of causing harm to the child's health or physical, mental, spiritual, moral or social development. These acts must be reasonably within the control of the parent or person in a relationship of responsibility, trust or power. Acts include restriction of movement, patterns of belittling, denigrating, scapegoating, threatening, scaring, discriminating, ridiculing or other non-physical forms of hostile or rejecting treatment" (WHO, 1999, p.15). Since this doctoral project focused on the most common types of

violence perpetrated by parents, namely physical and emotional violence (Devries et al., 2018), sexual abuse and neglect are not further discussed. The WHO definition recognises perpetrators of child maltreatment as anyone who is engaged in a relationship with the child of responsibility, trust, or power. In practice, however, more than 80% of cases of maltreatment (excluding sexual abuse) are perpetrated by parents or parental guardians (Gilbert et al., 2009; UNICEF, 2014b).

Since the publication of the WHO definition, multiple definitions have been postulated, leading to a variety of terms and classifications, and consequently, concerns about considerable variations in research findings depending on the definition used (for a review of definitions see Laajasalo et al., 2023 and Massullo et at., 2023). For example, Moody et al. (2018) stated that "estimating the prevalence of child maltreatment is challenging due to the absence of a clear 'gold standard' as to what constitutes maltreatment" (p.1).

While societies and legislations across the world promote the prevention of child maltreatment, there is still a strong debate regarding *which exact behaviours* constitute child maltreatment, particularly given 'milder' forms of physical and emotional abuse, such as harsh disciplining and corporal punishment. For example, according to the WHO definition of physical abuse, the majority of physical violence against children in the home, such as hitting, is inflicted with the object of punishing (WHO, 2006). On the other hand, the American Psychiatric Association clearly excludes physical discipline in their latest Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criterion on physical abuse: "Physical discipline, such as spanking or paddling, is not considered abuse as long as it is reasonable and causes no bodily injury to the child" (American Psychiatric Association, 2013). However, disciplining through physical and verbal means is included in their definition of child psychological abuse and, consequently, child maltreatment:

"[…] disciplining the child excessively (i.e., at an extremely high frequency or duration, even if not at a level of physical abuse) through physical or nonphysical means" (American Psychiatric Association, 2013).

2.1.3 The recognition of harsh parenting and corporal punishment

In recent years, concerns have grown to acknowledge the equal harms resulting from corporal punishment and harsh parenting as from child maltreatment (Durrant & Ensom, 2012; Gershoff et al., 2018), including calls to include corporal punishment in the definition of adverse childhood experiences (Afifi et al., 2017). In line with this standpoint, the United Nations Committee on the Rights of the Child released a general comment on the right of the child to protection from corporal punishment and other cruel or degrading forms of punishment (UN, 2007). The Committee defined corporal or physical punishment as "any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light. Most involves hitting ('smacking', 'slapping', 'spanking') children, with the hand or with an implement - a whip, stick, belt, shoe, wooden spoon, etc. But it can also involve, for example, kicking, shaking or throwing children, scratching, pinching, biting, pulling hair or boxing ears, forcing children to stay in uncomfortable positions, burning, scalding or forced ingestion (for example, washing children's mouths out with soap or forcing them to swallow hot spices). In the view of the Committee, corporal punishment is invariably degrading." (p.4). Furthermore, the Committee acknowledged the potential of harm from emotional violent punishment: "In addition, there are other non-physical forms of punishment that are also cruel and degrading and thus incompatible with the Convention. These include, for example, punishment which belittles, humiliates, denigrates, scapegoats, threatens, scares or ridicules the child." (p.5). The Committee is clear: "Corporal punishment and other cruel or degrading forms of punishment are forms of violence" (p.6).

Yet, many of the above stated behaviours are typically associated with child maltreatment. Since the debate between what constitutes child maltreatment and what constitutes harsh disciplining (such as corporal punishment) is not resolved, this doctoral thesis conceptualises violence as a spectrum including all types of physical and emotional violent parenting behaviours, regardless of severity or whether defined as child maltreatment or harsh parenting. This is in line with the approach used by various international organisations that prefer the term *violence against children* over *child maltreatment* to be inclusive of all forms of violent behaviours; this is grounded in the belief that all forms of violence on the continuum breach the child's right to respect for his or her physical and psychological integrity (Global Partnership to End Violence Against Children, 2016).

2.1.4. Measuring violence against children

Violence against children can be measured using observation, administrative data, or self-reports. Self-reports may be made by parents, or by children reporting on the current experiences of violence, or retrospectively when children reach adulthood. Each measurement type has limitations (Mathews et al., 2020). For example, most parental violence does not come to the attention of official agencies, therefore, official reporting is at high-risk for underestimating prevalence rates. Observation is typically limited to a short time span, and thus only captures violent exposures during the span of observation. Asking young children about their experiences of violence is often associated with ethical concerns, and parental reporting is at high-risk for social desirability. Finally, asking adults about their childhood experiences comes with a risk of recall bias. However, self-report data is the most widely used type of measurement to examine violence against children (Devries et al., 2018); it is considered the most comprehensive measurement to identify cases (Meinck et al., 2016), as previous research revealed that self-reported physical abuse

victimisation is >75 times higher compared to official records (Stoltenborgh et al., 2013). Most research on violence against young children uses self-reports from parents, and there are currently no valid and reliable instruments available for self-report by young children (Devries et al., 2018).

Various reviews examined the validity of child maltreatment measures (Georgieva et al., 2022; Saini et al., 2019; Terwee et al., 2018; Yoon et al., 2020). One such review focused on parent self-report instruments (Yoon et al., 2020), and found nine instruments with sufficient psychometric data. The authors highlighted there may be some cultural differences in the interpretation of certain maltreating behaviours, such as spanking, which indicates that the included instruments also captured corporal punishment. No review examined the validity of measures of harsh parenting. One review focusing on general parenting practice measures found a tremendous number of instruments (k = 480) of very heterogeneous parenting constructs (e.g., parental well-being vs. parenting practices; Blower et al., 2019). It identified three common instruments for parenting practices of which two include violent parenting behaviours (i. Parenting Scale, for example: “I spank, grab, slap, or hit my child most of the time”; ii. Alabama Parenting Questionnaire, for example: “You slap your child when he/she has done something wrong”).

Instruments may include very different violent behaviours, and thus reflect high levels of heterogeneity in the items measured. For example, some instruments may only measure spanking a child, whereas other instruments may include a broader spectrum of violence such as slapping, biting, or kicking a child. Massullo et al. (2023) found these high levels of heterogeneity in operationalisations of child maltreatment within and between reviews. Heterogeneity seems also substantial in studies measuring harsh parenting. For example, the Alabama Parenting Questionnaire (Frick, 1991) measures spanking, slapping, and yelling at a child while the Parenting Practice Scale (Strayhorn &

Weidman, 1988), includes besides spanking, additional items for measuring emotional violent behaviours such as blaming a child or making fun of it, shouting, threatening, or yelling at a child. Furthermore, it appears that there is considerable overlap between measures of harsh parenting and child maltreatment. Physical violence (e.g., spanking and slapping) is measured not only by child maltreatment instruments, such as the Conflict Tactic Scale Parent Child version (CTSPC, Straus et al., 1998) and International Society for the Prevention of Child Abuse and Neglect (ISPCAN) Child Abuse Screening Tool (ICAST, Runyan et al., 2009), but also by instruments that do not claim to measure physical abuse but harsh parenting, such as the Alabama Parenting Questionnaire (APQ), Parenting Scale (PS, Arnold et al., 1993), and the Parent Practice Interview (PPI, Webster-Stratton, 1998). Emotional violence (e.g., yelling, insulting, and swearing) is measured by the ICAST, but also by numerous harsh parenting instruments (e.g., APQ, PS). Despite the similarities of these items and underlying constructs, many reviews focusing on, for example, intervention effectiveness do not state that they measure violence against children, but general parenting practices or harsh parenting. Yet, they include measures that appear to be very similar to those measuring child maltreatment.

Since the actual construct studied is essentially determined by the operationalisation and instruments used to assess the outcome, it is crucial to understand whether harsh parenting and child maltreatment instruments do in fact measure the same or different violent parenting behaviours. If harsh parenting and child maltreatment instruments measure essentially the same behaviours but are labelled differently, there is a substantial risk that previous evidence syntheses ignored an important body of evidence when estimating prevalence rates, examining risk factors, ramifications of violence, or intervention effectiveness.

2.1.5 Risk, prevalence & consequences of violence against children

The ambiguity in the distinction between child maltreatment and harsh parenting is further visible when reviewing the strong overlap in risk factors, prevalence rates, consequences, and prevention efforts of both constructs.

2.1.5.1 Risk factors for violence against children

Increased risk for child maltreatment has been associated with social disadvantage and a range of social determinants of health (Hunter & Flores, 2021; Stith et al., 2009; Walsh et al., 2019), including poverty (Afifi et al., 2015), joblessness (Judd et al., 2023), household crowding (Afifi et al., 2015), as well as with mental health problems (Ayers et al., 2019), violence between partners (Chiesa et al., 2018), and previous experiences of child maltreatment as a child (Assink et al., 2018; Greene et al., 2020). The same risk factors have been identified for harsh parenting. Social disadvantage indicators such as poverty, lower level of education (Cappa & Dam, 2014; UNICEF, 2014b), and household crowding (Gao et al., 2021), mental health problems (Choi & Becher, 2019; Kim et al., 2010), violence between partners (Finger et al., 2010; Riem et al., 2021), and experiences of harsh parenting in childhood (Lomanowska et al., 2017; Scaramella et al., 2008; Simons et al., 1991) were associated with an increased risk for harsh disciplining of children.

Main perpetrators of physical and emotional maltreatment and harsh disciplining seem to be consistently identified as the parents or key caregivers of children (Devries et al., 2018; Gilbert et al., 2012; UNICEF, 2017), followed by teachers and peers.

2.1.5.2 Prevalence of violence against children

Child maltreatment and harsh parenting behaviours are prevalent. It is estimated that 1 billion children aged 2–17 years experience child maltreatment annually (Hillis et al., 2016). A systematic review of reviews found that the most prevalent type of child

maltreatment is emotional abuse (36% of children), followed by physical abuse (23% of children; Stoltenborgh et al., 2015); the included studies in this review of reviews were from across the globe, however, studies from South America were underrepresented in the estimate of physical abuse, and from Australia in the estimate of emotional abuse. A meta-analysis using child self-report found high variation in reports between continents (Moody et al., 2018). Physical abuse reports ranged from 7% to 60%, and emotional abuse from 6% to 60%.

Data from UNICEF's Multiple Indicators Cluster Surveys, that focus on low- and middle-income countries (LMICS) and include a module on harsh disciplining, suggest a higher prevalence for physical punishment (63%) and psychological aggression (67%; UNICEF, 2017). A recent review provided child-age estimates for children aged 2 to 4 years in LMICs (Cuartas et al., 2019); it estimated a prevalence of aggressive physical discipline of 62.5% and psychological discipline of 65.4%. Finally, a global review, using a multitude of data sources, applied a similar conceptualisation of violence as a spectrum regardless of underlying terminology, similar to this doctoral thesis (Devries et al., 2018). They found in their meta-analysis on prevalence rates higher estimates for emotional violence (60-70% of children) than physical violence (50-60% of children). The variations between estimates might be associated with the underlying measurement of violence against children (Prevoo et al., 2017), including the definition and the source of information. For example, while Hillis et al. (2016) excluded spanking from their measures of physical violence, Devries et al. (2018) included any type of physical or emotional violence. UNICEF's household surveys are largely answered by the parents, whereas Moody et al. (2018) included only child self-report data largely based on retrospective report once children reached adulthood.

2.1.5.3 Consequences of violence against children

Child maltreatment has been consistently associated with a broad range of mental and physical health problems (for a review see Carr et al., 2020; Lippard & Nemeroff, 2020), starting in childhood, such as child internalising and externalising problems (Herrenkohl et al., 1995; Lansford et al., 2002), cognitive development (Cooke et al., 2023), up to adulthood including suicidal ideation and attempts (Angelakis et al., 2019), depression (Humphreys et al., 2020), addiction (Santo et al., 2021), and disease (Gilbert et al., 2015; Gilbert et al., 2009).

Similar effects have been identified for physical and emotional harsh discipling by parents. Harsh disciplining was associated with more internalising and externalising behaviours (Berthelon et al., 2020; Chang et al., 2019; Gershoff et al., 2012; Kawabata et al., 2011; Pinquart, 2017), changes in brain and cognitive development (Cortes Hidalgo et al., 2021; Cuartas, 2022; Cuartas et al., 2021), and mental health problems in adolescence and adulthood (Afifi et al., 2017; Lo et al., 2021; Wang & Kenny, 2014). Importantly, negative effects of corporal punishment occur across cultures, including in those where corporal punishment is normative (Gershoff et al., 2012; Lansford et al., 2005).

2.1.6 The prevention of violence against children

Prevention strategies addressing violence against children cover a child's right to be protected from violence. While the UNCRC recognises and respects the responsibility of parents to guide and direct, with article 19 it mandates countries to take all appropriate measures to protect children from all forms of violence while in the care of parents, guardians, or other caregivers. Moreover, General Comment No. 8 states that any form of violent, cruel, or degrading treatment of a child is unacceptable. It is therefore not surprising that the first of the United Nations International Children's Fund's (UNICEF) strategies to end violence against children relates to supporting parents and families

(UNICEF, 2014a). The WHO, in collaboration with various international organisations and stakeholders, has published seven global strategies to end violence against children (WHO, 2016). All strategies are designed to help countries globally to achieve the Sustainable Development Goal 16.2. to "end abuse, exploitation, trafficking and all forms of violence against and torture of children" (UN, 2015). The strategies are: implementation and enforcement of laws; norms and values; safe environments; parent and caregiver support; income and economic strengthening; response and support services; and education and life skills. While not all strategies are equally relevant for the prevention of physical and emotional violence by parents (for example, life skills training for children typically focuses on sexual abuse prevention), the evidence is generally limited for most of these strategies except parenting support (Pundir et al., 2020). In fact, most preventive interventions for parents in child welfare contexts focus on parenting strategies (Landers et al., 2018). Particularly, parenting interventions are promoted as an effective global strategy to prevent and reduce violence perpetrated by parents (WHO, 2023). Interventions can range from psychoeducation about, for example, healthy behaviours in pregnancy, to interventions that offer training in parenting skills to manage conflict and difficult child behaviour in a non-violent way. They are typically manualised and offered to individual or groups of parents over the course of a couple of weeks.

2.2 Parenting interventions

2.2.1 History

The history of parenting interventions began with the recognition of the important role parents play in the development and well-being of their children. Starting in the 1960s, parenting interventions were implemented to improve parent-child relationships, and to treat a range of behavioural and emotional problems in children. Parenting interventions were established based on behaviourism, and used parents to modify child behaviours to

successfully decrease, for example tantrums, verbal aggression, excessive crying, or school phobia (Barlow et al., 2010). Social learning theory shaped the content of parenting interventions by including behaviour modification techniques such as positive reinforcement and punishment (Bandura, 1977). It also prompted the development of well-known social learning theory-based parenting interventions such as the Incredible Years programme (Webster-Stratton, 1984), Triple P Positive Parenting Program (Sanders, 1999), and Parent Child Interaction Therapy (Eyberg, 1988).

In the 1980s, attachment theory gained strong prominence, with new parenting interventions emphasising secure parent-child attachments, enhancement of parental sensitivity, and responsiveness to children (Bowlby, 1988). Attachment-based parenting programmes, such as the Attachment and Biobehavioral Catch-up (ABC), were developed and focused on nurturing care (Dozier et al., 2002). In the 1990s, ecological perspectives focusing on the context surrounding families informed the conceptualisation and delivery of parenting interventions (Bronfenbrenner, 1979; Luster & Okagaki, 2006), leading to modifications in programmes to include other family stressors such as the need for social support. Furthermore, until the 1990s corporal punishment was promoted as a legitimate and effective parenting strategy in some parenting interventions (Kaehler et al., 2016); however, growing research at the end of the 20th century showed the links between spanking and child behavioural problems, leading to the promotion of non-violent strategies to manage child non-compliant behaviours (Durrant & Ensom, 2012).

With rapid technological advancements in the 2000s, there were novel opportunities to create and provide digital formats of parenting interventions, such as on television, CD-ROM, or online, of well-known programmes such as Incredible Years, Parent Management Training – Oregon, and Triple P (Breitenstein et al., 2014). Furthermore, studies demonstrated the potential of parenting interventions to prevent

extreme forms of negative parenting behaviours such as child maltreatment (Barlow et al., 2006), thereby expanding the aims of parenting interventions and target families. This focus gained further research interest in the 2010s, with an increasing number of studies focusing on the effects of parenting interventions to reduce child abuse and neglect. Additionally, there has been significant policy and research attention directed towards the effectiveness of parenting interventions in LMICs (Britto et al., 2015; Fang et al., 2020; Jeong et al., 2018; Knerr et al., 2013; Marcus et al., 2019; McCoy et al., 2020; Mejia et al., 2017). This includes whether interventions can be transported from high-income countries to LMICs (Gardner et al., 2016; Leijten et al., 2016), and to what degree cultural adaptions of transported interventions are needed (Mejía et al., 2017).

The beginning of the current decade was shaped by the COVID-19 pandemic and its subsequent forceful shift towards more digital formats. Ongoing evaluations of parenting programmes include the effects of Apps and Chatbots that widely distribute core components of parenting programmes (GPI, 2022b). Currently, research focuses on the scale-up of parenting interventions (Britto et al., 2022), however, there are valid concerns on the long-term effects, equity effects, and wider societal implications of these programmes (see INTEGRATE Framework, Rehfuess et al., 2019).

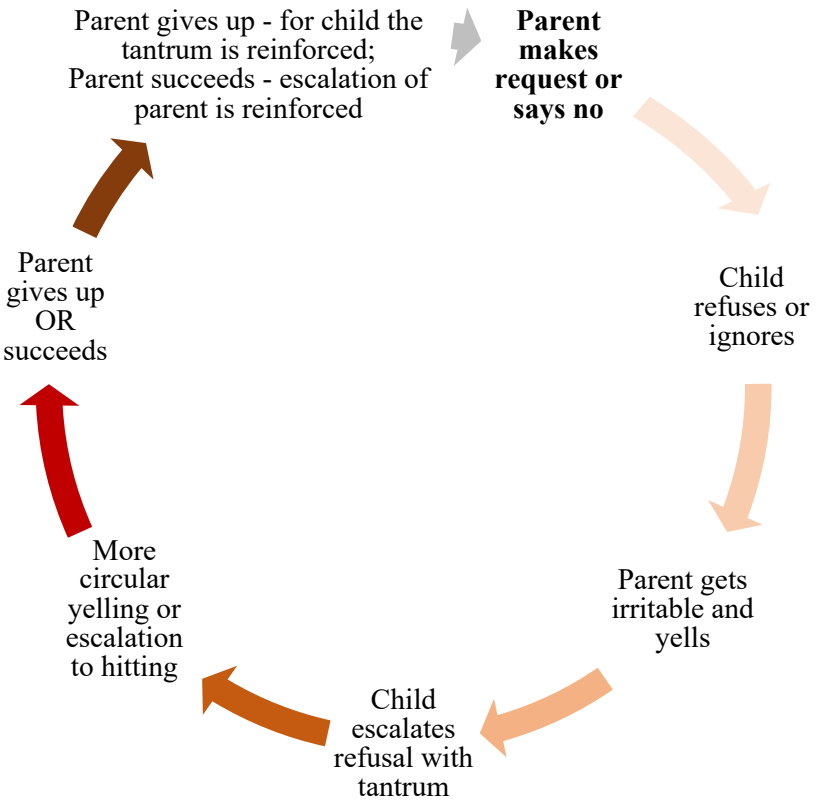
2.2.2 Theory of change

Parenting programmes offer a combined service of parenting knowledge, skill building, competency enhancement, and support for parents (Cowen, 2001). They typically include a set of activities or services aimed at improving how parents and caregivers approach and execute their role (WHO, 2023). Many evidence-based parenting interventions share common theoretical foundations that translate into core components. Most programmes are grounded in either attachment theory (Bowlby, 1988), or social learning (Bandura, 1977) and coercion theory (Patterson, 1982). Attachment theory emphasises the importance of a

primary caregiver's sensitivity toward their child's needs, and the interchange of warmth and positive affect (Bretherton, 1992). Parenting interventions based on attachment theory aim to enhance parents' ability for responsive parenting. Some interventions that are largely based on social learning theory also include attachment-based components. For example, many interventions promote child directed play and nurturing parenting (e.g., Parent Child Interaction Therapy, Parenting for Lifelong Health, Incredible Years). Attachment-based programmes are generally delivered to families with very young children focusing on the early years from birth onwards (Barlow et al., 2010).

Interventions based on social learning theory are mostly implemented during the toddler and childhood years, either prior to or after the onset of child behaviour problems (Furlong et al., 2013), around the ages 2–10 years. Social learning theory posits that children learn behaviours by observing and imitating others, including their parents. Parents model adverse behaviours, such as screaming, yelling, spanking, or hitting. As a result, in modelling their parents' behaviour, children may learn that these behaviours are acceptable (White & Straus, 1981). Moreover, social learning theory-based programmes view parents as the primary change agents in shaping children's behaviours using rewards and punishment. For example, Incredible Years helps parents with effective limit setting and the use of clear commands that are developmentally appropriate, and the ignoring of negative attention-seeking child behaviours. Lastly, coercion theory strongly builds on social learning theory and describes a maladaptive pattern in which a child learns that disruptive behaviour is functional, and parents grow more frustrated with their child's non-compliant behaviour, as well as their inability to efficiently manage the situation (Patterson, 1982). As a result, parents caught in this coercive cycle may turn towards more violent disciplining methods. Figure 2.1 displays a typical violent coercive cycle of parent-child interaction.

Figure 2.1 Adaptation of the coercive cycle (Patterson, 1982)



Parenting interventions based on social learning theory try to break coercive cycles of parent-child violence, and enhance positive parenting skills, parent-child interactions, introduce parents to reward of positive child behaviour, and illustrate adequate disciplining strategies. Positive parenting skills include child-led play, socio-emotional coaching, praise, and one-on-one time. Adequate disciplining strategies include positive instruction giving, establishing household rules and routines, ignoring negative attention seeking behaviours, using appropriate consequences, involving children in problem solving, and, if needed, time-out for aggressive behaviours. Many social learning theory-based parenting interventions are based on the foundational work of Constance Hanf (Hanf, 1969), and focus on strengthening parenting skills that increase positive attention for appropriate child behaviours, remove attention for inappropriate ones, and implement effective instructions and consequences for noncompliance (Kaehler et al., 2016). Many social learning theory-based programmes also promote joint play between parents and children, enhance warmth

and paternal responsiveness, closeness and acceptance, and show parents how to regulate their own emotions (Hutchings et al., 2004).

Since these interventions aim to replace harsh and violent parenting behaviours with more adaptive ones, they can be considered as an effective prevention strategy for violence against children (Barlow et al., 2008; Chen & Chan, 2016; Gershoff et al., 2017; Prinz & Shapiro, 2017). In fact, a recent analysis of social learning theory-based programmes identified that alternative punishment strategies and parental self-management strategies taught in social learning theory-based programmes are key components that can reduce physical abuse (Melendez-Torres et al., 2019).

2.2.3 Effectiveness to reduce violence against children

Multiple evidence syntheses focus on the effectiveness of parenting interventions to reduce violence against children. A pioneering systematic review from 2006 concluded that there was only limited evidence to show that some parenting programmes may be effective in improving parenting outcomes associated with abuse, and stressed the urgent need for further research (Barlow et al., 2006). Since then, strong evidence increasingly emerged from systematic reviews showing that parenting interventions have the potential to decrease violent punishment and maltreatment (Barlow et al., 2006; Chen & Chan, 2016; Coore Desai et al., 2017; Lundahl et al., 2006), and may even prevent maltreatment recidivism (Vlahovicova et al., 2017). Further systematic reviews estimated an overarching summary effect of parenting interventions to reduce violence against children using meta-analytic strategies. Chen and Chan (2016) found in their meta-analysis of 37 parenting intervention evaluations a reduction in official substantiated child maltreatment reports (d = 0.21, 95% CI [0.02, 0.39]), and in parent report of physical and emotional aggression and neglect (d = 0.21, 95% CI [0.08, 0.33]). Gubbels et al. (2019) found an overarching effect for child maltreatment (d = 0.42, 95% CI [0.33, 0.50]) across 50 studies. Backhaus

and Gardner et al. (2023) found across 130 studies from LMICs, of which 20 trials reported child maltreatment outcomes, an overall reduction in child maltreatment, including physical abuse and psychological abuse (d = –0.39, 95% CI [–0.61, –0.17]). However, it should be noted that the evidence is not definitive. Euser et al. (2015) identified that the effects of parenting interventions to reduce violence against children become negligible when controlling for publication bias. These conflicting effectiveness findings may be attributed to notable differences between the reviews in terms of definition and operationalisation, inclusion of interventions and populations, and rigour of included studies.

2.2.3.1 Differences in the definition and operationalisation of violence against children

The operationalisation of what constitutes violence against children varied strongly between reviews; some included only official reports of child maltreatment (Batzer et al., 2018; Kennedy et al., 2016; Warren et al., 2022; Whitcombe-Dobbs & Tarren-Sweeney, 2019), or other validated child maltreatment instruments (Euser et al., 2015). In contrast, a range of reviews included proxies of violence against children in their outcome category of child maltreatment such as risk for child abuse (Casillas et al., 2016; Chen & Chan, 2016; Gubbels et al., 2019), dysfunctional parenting (Coore Desai et al., 2017; McCoy et al., 2020), or other outcomes "strongly associated with abuse such as for example parental psychopathology, parenting attitudes and practices, and family functioning" (Barlow et al. 2008, p. 4). Furthermore, most reviews examining the effects of parenting interventions on child maltreatment include measures of harsh parenting (Chen & Chan, 2016; Coore Desai et al., 2017; Fang et al., 2020; Gubbels et al., 2019; Knerr et al., 2013; McCloskey L., 2011; McCoy et al., 2020; Morello et al., 2022; Pontes et al., 2019; van der Put et al., 2018; Vlahovicova et al., 2017).

This overarching heterogeneity in the operationalisation of constructs across reviews is critical, making it a challenge to compare the findings of reviews and meta-analyses, and further highlights the discord in whether harsh parenting and child maltreatment should be treated as distinct constructs. In addition, this heterogeneity might lead to different overarching summary estimates in meta-analyses. For example, Euser et al. (2015) only included validated child maltreatment instruments and found a small effect on maltreatment (d = 0.13) that disappeared after controlling for publication bias. On the other hand, McCoy et al. (2020) included also additional forms of negative parenting and found an effect of d = 0.42; and van der Put et al. (2018) included also measures of harsh parenting and found an effect of d = 0.43 for parent training.

2.2.3.2 Differences in inclusion of interventions

Reviews varied in their inclusion criteria of parenting interventions. Some reviews focused on programmes with a clear social learning theoretical foundation (Vlahovicova et al., 2017), or on a particular social learning theory-based programme (Parent Child Interaction Therapy: Batzer et al., 2018; Kennedy et al., 2016; Warren et al., 2022; ACT Raising Safe Kids: Pontes et al., 2019). However, most reviews included any parenting intervention, regardless of the underlying theory of change and consequent components delivered to parents, which in turn leads to a heterogeneous set of parenting interventions and less specific effectiveness conclusions (Altafim & Linhares, 2016; Backhaus & Gardner et al., 2023; Barlow et al., 2008; Branco et al. 2021, Chen & Chan, 2016; Coore Desai et al. 2017; Euser et al. 2015; Fang et al., 2020; Gubbels et al., 2019; Heinen et al., 2023; Kennedy et al., 2016; Knerr et al., 2013; Lundahl et al., 2006; McCloskey, 2011; McCoy et al., 2020; Morello et al., 2022; Santini & Williams, 2016; Whitcombe-Dodds & Tarren-Sweeney, 2019). While it is important for policymakers to know whether parenting interventions are effective overall in reducing violence against children, more crucial is the

knowledge of which particular interventions and which essential components of interventions are effective. However, it is important to note that a recent umbrella review identified that the most evaluated interventions included in general parenting intervention reviews are those based on social learning theory (Heinen et al., 2023).

In addition to predefined inclusion criteria that determine which interventions are included in a review, the final selection of studies is strongly influenced by the search terms employed. Many reviews used search terms restricted to child maltreatment terminology, such as abuse, neglect or maltreatment (Altafim & Linhares, 2016; Barlow et al., 2008; Batzer et al., 2018; Branco et al., 2021; Chen & Chan 2016; Coore Desai et al., 2017; Euser et al., 2015; Fang et al., 2020; Gubbels et al., 2019; Kennedy et al., 2016; Landers et al., 2017; McCloskey, 2011; Morello et al., 2022; Santini & Williams, 2016; van der Put et al., 2018; Vlahovicova et al., 2017; Warren et al., 2022). However, parenting interventions, including those that are based on social learning theory, often have multiple aims, one of which is the reduction of violence against children. Additional aims include the reduction of child conduct problems or the improvement of family functioning. Performing searches with only child maltreatment terms can lead to omitting a set of relevant studies that can also inform the effectiveness evidence. For example, interventions such as Triple P, Incredible Years (IY), or Parent Child Interaction Therapy (PCIT) are carried out for the purpose of improving parenting skills or treating child conduct problems (for example, Triple P: Sanders et al., 2012; IY: Axberg et al., 2012; PCIT: Bagner et al., 2010). However, the same interventions with the same components are used to reduce violent parenting behaviours that are often described as corporal punishment or harsh parenting (for example, Triple P: Nogueira et al., 2021; IY: Leijten et al., 2017; PCIT: Chaffin et al., 2011). Hence, reviews that only use child maltreatment terminology omit

several trials that evaluate the same intervention methods and relevant outcomes but choose not to label the intervention as preventing child maltreatment.

2.2.3.3 Differences in rigour of evaluation studies under review

The rigour of evaluation studies ranges from low (using pre-post single group designs) to high (using randomised controlled trials). Some reviews summarised the effectiveness of randomised trials only (Barlow et al., 2008; Chen & Chan 2016; Euser et al., 2015; Knerr et al. 2013; McCloskey, 2011; McCoy et al., 2020; Morello et al., 2022; Vlahovicova et al., 2017), whereas others included a broad range of study designs that potentially could lead to different conclusions (association vs. causality), and a higher risk for confounding biases (see *Chapter 3*) (Altafim & Linhares, 2016; Batzer et al., 2018; Britto et al., 2015; Casillas et al., 2016; Fang et al., 2020; Gubbels et al., 2019; Kennedy et al., 2016; Lundahl et al., 2006; Pontes et al., 2019; Santini & Williams 2016; van der Put, 2018; Warren et al., 2022).

2.2.3.4 Differences in the populations included in reviews

Reviews of parenting interventions may further vary in which populations are included. For example, some reviews focus on maltreating parents identified by child protection services (Batzer et al., 2018; Landers et al, 2018; Morello et al., 2022; Vlahovicova et al., 2017; Warren et al., 2022) or families of children with special needs (e.g., Fang et al., 2020). Other reviews focus on high-risk or the general population (e.g., Altafim & Linhares, 2016; Euser et al., 2015).

One key challenge is the inclusion of populations from disadvantages settings, such as LMICs in systematic reviews (Heinen et al., 2023). While it is extremely rare for reviews to limit their inclusion criteria to high-income countries (except for McCloskey, 2011), they still infrequently include studies from LMICs. The reason may be two-fold: first, there may be a gap of evaluation studies from low-income settings as stated by many

reviews (Heinen et al., 2023). This may not be surprising for reviews focusing on families in contact with child protection services, as these services are scarce in low-resource settings. Yet, a lack of LMICs studies is also present in reviews focusing on the general population (e.g., Chen & Chan, 2016). However, those reviews focusing on a particular LMIC (China: Fang et al. 2020), or region (East and Southeast Asia: McCoy et al., 2020), identified various randomised controlled trials that have not been included in other reviews. Therefore, the second and more likely reason is that searches in multiple languages may be particularly relevant when trying to identify the global evidence. For example, Backhaus and Gardner et al. (2023) searched in four additional languages and found in their review focusing on LMICs a total of 131 randomised controlled trials of parenting interventions. However, this might be partly explained by wider inclusion criteria regarding the type of parenting interventions and outcome measures.

2.2.4 Sustainability of effects over time

Very little is known about the effectiveness of parenting interventions over time. Most reviews could not establish a long-term effect of parenting interventions due to a lack of studies with follow-up data beyond the first few months. For example, Altafim and Linhares (2016) identified only three randomised controlled trials with follow-up assessments. Kennedy et al., (2016) found two studies with long follow-up periods, however, only one of those trials found sustained effects. Lundahl et al. (2006) aimed to estimate separate immediate and follow-up effects. However, data included in the follow-up effects was based on "months after treatment has ended", and no study reported on long-term impact on parenting behaviours. In McCoy et al.'s review the longest follow-up was four months, and the authors stressed the need for follow-up studies (McCoy et al., 2020). Only a handful of meta-analyses found enough studies to explore whether effects were sustained over time. A review on interventions to prevent child maltreatment, that did

not particularly focus on parenting interventions and included a variety of study designs, found stronger effects over time (van der Put et al., 2018). However, two reviews focusing on randomised controlled trials of parenting interventions, namely Euser et al. (2015) and Gubbels et al. (2019), suggest in their exploratory analyses the presence of sustained effects in child maltreatment reduction. In the study by Euser et al. (2015), no significant difference in the magnitude of effect was found between post-test and follow-up, indicating sustained effect. It is important to note, however, that this conclusion was based on a small number of randomised controlled trials, and the lengths of follow-up was unknown. Similarly, Gubbels et al. (2019) examined whether follow-up duration served as a significant moderator for the effectiveness of parenting programmes in reducing child maltreatment. Their findings did not reveal a significant moderation effect, thus indicating sustained effects. However, as with Euser et al., (2015) the specific length of the follow-up assessment was not clearly specified.

Therefore, it is still unclear whether the magnitude in effect alters over time. Three distinct scenarios are possible. First, effects may increase over time if behaviour change requires additional time beyond the intervention duration and more practice by parents in challenging situations. Second, effects may be sustained over time if parents apply consistently the newly learned non-violent behaviour management techniques to the same magnitude as during the intervention. Third, effects may become smaller over time if parents cannot maintain the newly learned techniques and fall back into their old violent parenting patterns. Studying how effects may change over time is crucial yet a challenge to the research community, due to ethical and financial challenges, such as wait-list control groups or limited funding to collect follow-up data. Nonetheless, with global expansion and scale-up of parenting interventions, definitive knowledge about the effectiveness over time becomes more urgent.

2.2.5 Differential effects

The low-to-moderate main effects of parenting interventions, and levels of heterogeneity in effects, suggests that not every parent responds equally to parenting interventions. It may very well be that factors associated with the parent or context influence the effectiveness of a given intervention. Identifying those potential moderating variables may help to improve the effectiveness of parenting interventions. In addition, knowing which factors influence effectiveness can help policymakers and practitioners to target individuals that are more likely to benefit. However, even more crucial, unravelling potential factors that lead to differential effects can identify whether families most in need of support have equal chances to benefit from these interventions.

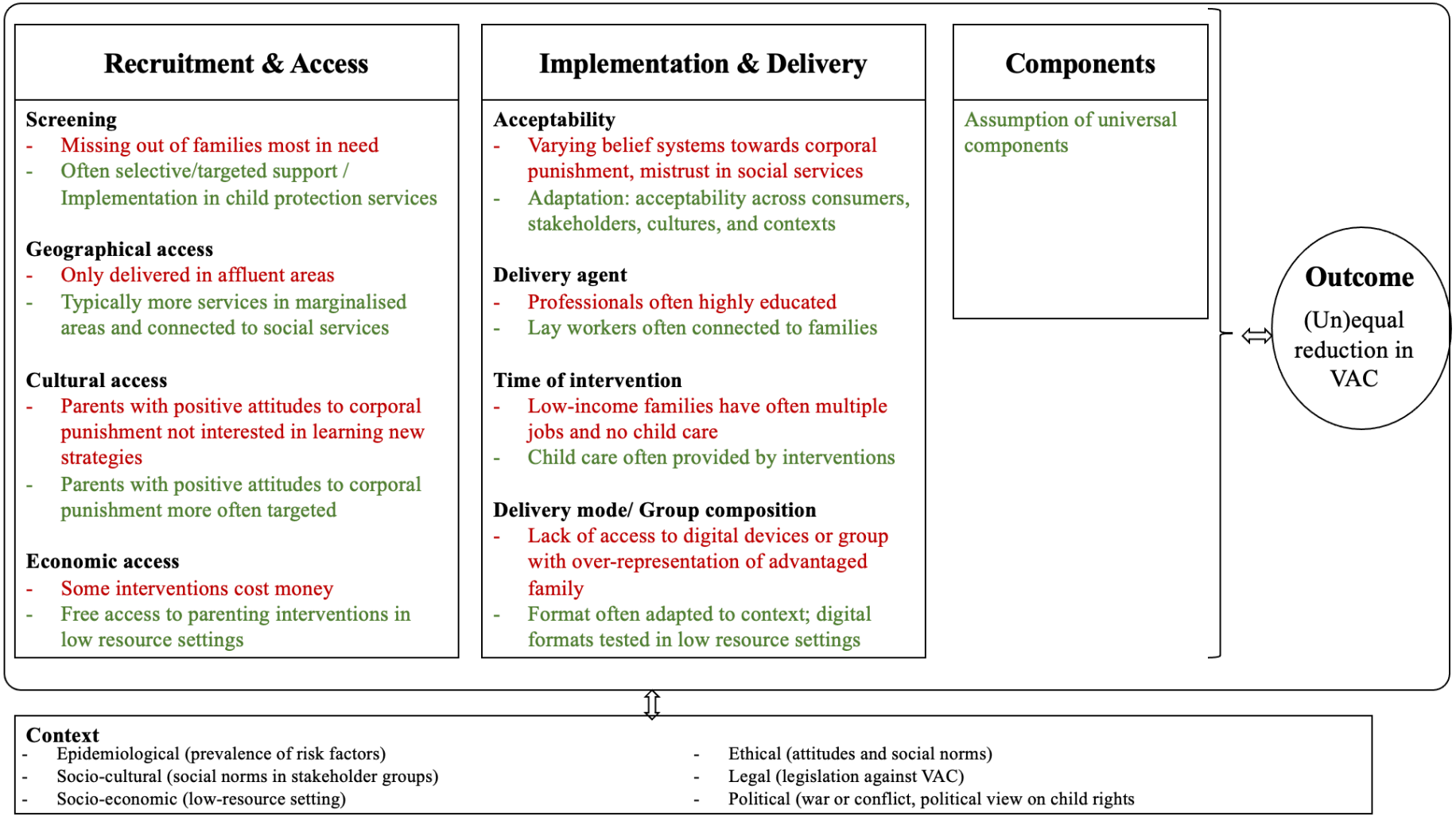
Accordingly, there is a growing recognition that some interventions may actually increase health inequalities if they disproportionally benefit more affluent groups. Lorenc et al. (2013) classified this observed concern as *intervention generated inequalities*. Within this context, literature emerged examining more closely potential differential effects of a wide variety of public health interventions and policies. Yet, a recent publication identified recurring methodological issues with the subgroup analyses reported in the literature (Inglis et al., 2018), questioning the credibility of these analyses. This is highly problematic since non-credible subgroup analyses produce dubious differential intervention effects leading policymakers towards erroneous conclusions and decisions. On the other hand, credible subgroup analyses uncover whether interventions reduce or increase inequalities, and hence, are valuable resources for policymakers.

Differential equity effects in parenting interventions can arise if parents facing social disadvantage encounter challenges in attending all sessions and effectively implementing newly learned parenting techniques. These challenges may stem from economic stressors, competing priorities, or a perception that the content of and examples

in parenting interventions are not applicable to their own lived experiences. However, it is important to note that many parenting interventions specifically target those families in greatest need, offering them free access and incorporating cultural adaptation to better align with the target population (WHO, 2023). Figure 2.2 displays a logic model of potential barriers for intervention success for disadvantages families (in red) and common approaches in parenting interventions that may secure intervention effectiveness (in green).

The literature on potential moderators that may impact parenting intervention effectiveness is vast, however, limited for factors related to inequalities. Previous meta-analyses examined the influence of implementation factors such as delivery mode or staff qualification (Casillas et al., 2016; Chen & Chan 2016; Euser et al., 2015, Fang et al., 2020, Lundahl 2016, van der Put 2018); intervention characteristics such as dosage or components (Chen & Chan, 2016, Euser et al., 2015, Fang et al., 2020, van der Put et al., 2018); study characteristics such as sample size or control type (Casillas et al., 2016; Chen & Chan 2016, Euser et al., 2015, Fang et al., 2020, van der Put et al., 2018); and participant characteristics, such as gender or age (Chen & Chan, 2016; Lundahl et al., 2016). These meta-analyses were not coherent in which moderators they analysed nor identified. Two meta-analyses found no difference in effects between interventions delivered by professionals versus paraprofessionals (Casillas et al., 2016; Chen & Chan, 2016), whereas van der Put (2018) found stronger effects for interventions delivered by professionals only. Two meta-analyses found no difference between interventions that target families across different levels of prevention (Chen & Chan, 2016; van der Put, 2018), however stronger effects were found for interventions targeting maltreating families compared to non-maltreating families in two different meta-analyses (Casillas et al., 2016; Euser et al., 2015). One meta-analysis found stronger effects for programmes that included less than 12 sessions (Chen & Chan, 2016), whereas, in contrast, another meta-analysis

Figure 2.2 Potential barriers for intervention success and reactional approaches in parenting interventions



showed stronger effects for programme that delivered 16–30 sessions (Euser et al., 2015). Finally, while two meta-analyses found no differential effect for child age (Lundahl et al., 2016; van der Put et al., 2018), one meta-analysis found stronger effects for older children (Euser et al., 2015). Based on this mixed evidence of moderation effects, it is difficult to conclude which factors explain the heterogeneity in effect of parenting interventions to reduce violence.

Multiple reviews examined whether social disadvantage moderates the effects of parenting interventions in reducing violence, leading to similar mixed findings. A meta-analysis focusing on reducing negative parenting behaviours (including harsh parenting) found no differential effect for trials with higher percentage of parents with low levels of education, family income, or single parents (Penner-Goeke et al, 2020, Preprint). In line with these findings, two meta-analyses that included families with a migration background demonstrated the effectiveness of parenting interventions in reducing negative parenting behaviours within these migrant populations (Lim et al., 2023; Van Mourik et al., 2017). Furthermore, Euser et al., (2015) found in their meta-analysis of parenting intervention trials no differential effect by trial distribution of socioeconomic status or ethnicity on the effectiveness to reduce child maltreatment. In contrast, Lundahl et al., (2006) discovered that family adversity significantly undermined changes in parenting behaviours. Furthermore, a comprehensive meta-analysis examining various interventions found that trials with higher percentage of minority parents yielded smaller effects in reducing child maltreatment (van der Put et al., 2018).

Traditional meta-analyses, using aggregate-level data, are not necessarily adequately equipped to examine moderation effects, due to insufficient power to detect moderation effects and the risk for ecological bias (Berlin et al., 2002; Brown et al., 2013). Furthermore, traditional meta-analyses can assess whether the proportion of disadvantaged families in a

trial affects the overall effectiveness of a given intervention, but they are unable to identify whether individual parents living in disadvantage have more or less benefits from parenting interventions. In contrast, individual participant data (IPD) meta-analysis is particularly well-suited to test moderation effects. In an IPD meta-analysis, raw individual family level data is obtained from each study and used for synthesis (see Chapter 3 for a detailed discussion on traditional and IPD meta-analyses). Two previous IPD meta-analyses have examined whether the effects of parenting intervention are influenced by social disadvantage; these analyses included trials from the Incredible Years programme (Leijten et al., 2018: Netherlands; Gardner et al., 2019: Europe). The findings from both analyses indicated no differential effects based on factors such as education or ethnic background (Gardner et al., 2019; Leijten et al., 2018), as well as poverty, lone parenthood, teenage parenthood, or household joblessness (Gardner et al., 2019). However, these two analyses solely focused on child behaviour outcomes, leaving it unclear whether social disadvantage might moderate the effects of parenting interventions on reducing violence against children.

2.2.6 Distribution and policy interest

In recent years, parenting interventions, as a strategy to reduce violence against children, have gained significant policy interest around the globe. Parenting interventions align well with the United Nations' Sustainable Development Goals, particularly, with target 16.2 "End abuse, exploitation, trafficking and all forms of violence against children and torture of children" (UN, 2015; WHO, 2023). Various international organisations, including the United Nations Office on Drugs and Crime (UNODC) and UNICEF, promote the implementation of parenting interventions (UNICEF, 2020; UNODC, 2009). For example, UNICEF's global Child Protection Strategy aims to "empower mothers, fathers and other caregivers to adopt positive parenting approaches through community engagement and inclusive positive parenting support services" (UNICEF, 2021, p.25). The European Union published a memo

that provides an introduction and guidance on implementing parenting interventions across its Member States (European Union, 2019). Notably, the WHO is a key promoter of parenting support to end violence against children (WHO, 2016). As part as WHO's advocacy efforts, the Global Initiative to Support Parents was launched – a coalition of global partners including WHO, UNICEF, Parenting for Lifelong Health, the Early Childhood Development Action Network, and the Global Partnership to End Violence Against Children (GISP, 2021). Together, these efforts have led to investments by policymakers to provide access to and scale-up of parenting interventions. For example, UNICEF, with support from the LEGO Foundation, is currently scaling-up a playful parenting package in Serbia and Zambia (UNICEF Serbia, 2019), and the Global Parenting Initiative is working with the national government to scale up Parenting for Lifelong Health within the health sector in Thailand (GPI, 2022a). WHO's recent high-level publication of the WHO guidelines on parenting interventions to prevent maltreatment and enhance parent-child relationships with children aged 0–17 years will likely further amplify the global scale-up efforts of parenting interventions (WHO, 2023). The guidelines highlight the need for access to parenting interventions for all parents in need of support across the globe. The ongoing development of a handbook to complement the guidelines will provide much needed guidance for policymakers on how to select, design, evaluate, implement, monitor, and scale-up evidence-based parenting interventions. These initiatives highlight the strong interest by policymakers and international organisations in the dissemination of parenting interventions. However, of particularly concern regarding the wide roll-out and scale-up of parenting interventions, policymakers are in need of further research on the equity and long-term effects of parenting interventions.

2.3 Summary and research aims

Violence against children is highly prevalent across the globe, violates the United Nations Convention on the Rights of the Child, and can have devastating consequences to child well-being and development. Parents are the main perpetrators of violence against children. Many children experience physical and emotional violent disciplining by their parents such as spanking, slapping, beating, threatening, insulting, or shouting at a child. Interventions that support parents have been promoted as an effective strategy to end violence against children. Parenting interventions, particularly those based on social learning theory, show parents alternatives to violence, and improve parent-child relationships. There is strong policy interest in parenting interventions, as highlighted in multiple scale-up efforts across the globe, and with the publication of the WHO global guidelines on parenting interventions. However, in carefully examining the literature, there seem to be three key challenges related to the effectiveness of parenting interventions to reduce violence against children.

1. Measurement heterogeneity in violence against children

The assessment of parenting intervention effectiveness in reducing violence against children relies on a multitude of instruments. However, the absence of consensus regarding the inclusion of specific measures in evidence syntheses has resulted in highly heterogeneous reviews and widely varying effect estimates, ranging from $d = 0.02$ to $d = –0.42$. While many reviews solely incorporate official markers of validated instruments of child maltreatment, some reviews also consider measures of harsh parenting. This approach may be well-justified since there appears to be a significant overlap between measures of child maltreatment and harsh parenting. Nevertheless, no study to date has thoroughly investigated and compared these instruments to assess their similarity.

Examining these instruments is crucial to the field, as the conclusions drawn from research findings, and approaches to prevention, strongly rely on consistent definitions and

operationalisations. This is particularly critical in the context of evidence syntheses, where multiple instruments are grouped under an overall outcome category.

2. Uncertainty of sustained effects of parenting interventions

Various reviews concluded that parenting interventions are an effective strategy to reduce violent parenting behaviours, however, the underlying data was largely measured at post-test assessment, often only several weeks after the intervention. Yet, the true effect of interest of parenting interventions, particularly to policymakers that consider investing in parenting interventions, is whether these interventions are effective over time.

3. Concern about equity effects in parenting interventions

Violence against children is highly patterned by socioeconomic variables, largely affecting families experiencing socioeconomic stress. While evidence syntheses of parenting interventions conclude there is effectiveness in reducing violence against children, the overarching summary effects show with high levels of heterogeneity. This suggest that not every parent responds equally to parenting interventions and that factors associated with the families may shape effectiveness. This would be particularly critical if families facing social disadvantage have lower benefits of parenting intervention, since this in turn may further widen social inequalities. It is unclear whether factors of social disadvantage impact the effectiveness of parenting interventions to reduce violence against children.

This DPhil thesis aims to advance the scientific understanding of parenting interventions and their effectiveness to reduce violence against children. This thesis aims to answer key policy questions of a) what are the effects of parenting interventions to reduce violence against children over time, and b) do families facing social disadvantage reduce their levels of violence in the same amount as families living in advantage. As such, this thesis will synthesise the global effectiveness evidence of parenting interventions to reduce violence

against children. However, to begin, it is crucial to establish a clear operationalisation of violence against children that encompasses all physical and emotional violent parenting behaviours. Consequently, this thesis will commence with a thorough examination and comparison of the content pertaining to child maltreatment and harsh parenting instruments. By exploring the overlap between these instruments, this thesis will not only establish a clear set of instruments eligible for evidence synthesis focusing on violence against children, but also contribute to the scientific debate on which behaviours constitute child maltreatment and which harsh parenting.

Specifically, this thesis is guided by the following research questions (RQ):

RQ 1 (*DPhil Paper 1*): How similar are child maltreatment and harsh parenting instruments in the physical and emotional violent behaviours they include?

Specific questions: a. Which and how many physical and emotional parenting behaviours are measured in both harsh parenting and child maltreatment parent self-report instruments?;

b. How does the homogeneity across child maltreatment and harsh parenting instruments compare to the homogeneity within each instrument category?

RQ 2 (*DPhil Paper 2*): What are the effects over time of parenting interventions to reduce physical and emotional violence?

Specific question: Do parenting interventions based on social learning theory for parents or other caregivers of children aged 2–10 reduce physical and emotional violence immediately after the intervention, and at 1–6 months, and 7–24 months follow-up?

RQ 3 (*DPhil Paper 3*): Do parenting interventions have differential effects in reducing violent parenting behaviours for families facing social disadvantage?

Specific question: In families with children aged 0–12 years that participate in a social learning theory-based parenting interventions, does social disadvantage (i.e., low income, low education, joblessness, ethnic minority status) moderate the effects on violence against children.

References

Afifi, T. O., Ford, D., Gershoff, E. T., Merrick, M., Grogan-Kaylor, A., Ports, K. A., . . . Peters Bennett, R. (2017). Spanking and adult mental health impairment: The case for the designation of spanking as an adverse childhood experience. *Child Abuse & Neglect*, *71*, 24-31. https://doi.org/10.1016/j.chiabu.2017.01.014

Afifi, T. O., Taillieu, T., Cheung, K., Katz, L. Y., Tonmyr, L., & Sareen, J. (2015). Substantiated reports of child maltreatment from the Canadian incidence study of reported child abuse and neglect 2008: examining child and household characteristics and child functional impairment. *The Canadian Journal of Psychiatry*, *60*(7), 315-323. https://doi.org/10.1177/070674371506000704

Altafim, E. R. P., & Linhares, M. B. M. (2016). Universal violence and child maltreatment prevention programs for parents: A systematic review. *Psychosocial Intervention*, *25*(1), 27-38. https://doi.org/10.1016/j.psi.2015.10.003

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders, DSM-5* (5 ed., Vol. 21).

Angelakis, I., Gillespie, E. L., & Panagioti, M. (2019). Childhood maltreatment and adult suicidality: a comprehensive systematic review with meta-analysis. *Psychological Medicine*, *49*(7), 1057-1078. https://doi.org/10.1017/S0033291718003823

Arnold, D. S., O'leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*, *5*(2), 137-144. https://doi.org/10.1037/1040-3590.5.2.137

Assink, M., Spruit, A., Schuts, M., Lindauer, R., van der Put, C. E., & Stams, G.-J. J. M. (2018). The intergenerational transmission of child maltreatment: A three-level meta-analysis. *Child Abuse & Neglect*, *84*, 131-145. https://doi.org/10.1016/j.chiabu.2018.07.037

Axberg, U., & Broberg, A. G. (2012). Evaluation of "The Incredible Years" in Sweden: The transferability of an American parent-training program to Sweden. *Scandinavian Journal of Psychology*, *53*(3), 224-232. https://doi.org/10.1111/j.1467-9450.2012.00955.x

Ayers, S., Bond, R., Webb, R., Miller, P., & Bateson, K. (2019). Perinatal mental health and risk of child maltreatment: A systematic review and meta-analysis. *Child Abuse & Neglect*, *98*, 104172. https://doi.org/10.1016/j.chiabu.2019.104172

Backhaus, S., Gardner, F., Schafer, M., Melendez-Torres, G. J., Knerr, W., & Lachman, J. M. (2023). *World Health Organization Guidelines on Parenting Interventions to Prevent Maltreatment and Enhance Parent–Child Relationships with Children aged 0-17 Years: Report of the Systematic Reviews of Evidence*. https://cdn.who.int/media/docs/default-source/documents/violence-prevention/systematic_reviews-for-the-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=158fd424_3

Bagner, D. M., Sheinkopf, S. J., Vohr, B. R., & Lester, B. M. (2010). Parenting intervention for externalizing behavior problems in children born premature: an initial examination. *Journal of Developmental Behavioral Pediatrics*, *31*(3), 209-216. https://doi.org/10.1097/DBP.0b013e3181d5a294

Bandura, A. (1977). *Social learning theory* (Vol. 1). Prentice-hall.

Barlow, J., Johnston, I., Kendrick, D., Polnay, L., & Stewart-Brown, S. (2008). Individual and group-based parenting programmes for the treatment of physical child abuse and neglect. *Cochrane Database of Systematic Reviews*, *4*, Article CD005463. https://doi.org/10.1002/14651858.CD005463.pub2.

Barlow, J., Simkiss, D., & Stewart-Brown, S. (2006). Interventions to prevent or ameliorate child physical abuse and neglect: findings from a systematic review of reviews.

Journal of Children's Services, *1*(3), 6-28. https://doi.org/10.1108/17466660200600020

Barlow, J., Smailagic, N., Ferriter, M., Bennett, C., & Jones, H. (2010). Group-based parent-training programmes for improving emotional and behavioural adjustment in children from birth to three years old. *Cochrane Database of Systematic Reviews*, *3*, Article CD003680. https://doi.org/10.1002/14651858.CD003680.pub2.

Batzer, S., Berg, T., Godinet, M. T., & Stotzer, R. L. (2018). Efficacy or chaos? Parent–child interaction therapy in maltreating populations: A review of research. *Trauma, Violence, & Abuse*, *19*(1), 3-19. https://doi.org/10.1177/1524838015620819

Berlin, J. A., Santanna, J., Schmid, C. H., Szczech, L. A., & Feldman, H. I. (2002). Individual patient-versus group-level data meta-regressions for the investigation of treatment effect modifiers: ecological bias rears its ugly head. *Statistics in medicine*, *21*(3), 371-387. https://doi.org/10.1002/sim.1023

Berthelon, M., Contreras, D., Kruger, D., & Palma, M. I. (2020). Harsh parenting during early childhood and child development. *Economics & Human Biology*, *36*, 100831. https://doi.org/10.1016/j.ehb.2019.100831

Blower, S. L., Gridley, N., Dunn, A., Bywater, T., Hindson, Z., & Bryant, M. (2019). Psychometric Properties of Parent Outcome Measures Used in RCTs of Antenatal and Early Years Parent Programs: A Systematic Review. *Clinical Child and Family Psychology Review*, *22*(3), 367-387. https://doi.org/10.1007/s10567-019-00276-2

Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. Basic books.

Branco, M. S. S., Altafim, E. R. P., & Linhares, M. B. M. (2021). Universal Intervention to Strengthen Parenting and Prevent Child Maltreatment: Updated Systematic Review.

Trauma, Violence, & Abuse, 15248380211013131. https://doi.org/10.1177/15248380211013131

Breitenstein, S. M., Gross, D., & Christophersen, R. (2014). Digital delivery methods of parenting training interventions: a systematic review. *Worldviews on Evidence-Based Nursing*, *11*(3), 168-176. https://doi.org/10.1111/wvn.12040

Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology*, *28*(5), 759-775. https://doi.org/10.1037/0012-1649.28.5.759

Britto, P. R., Bradley, R. H., Yoshikawa, H., Ponguta, L. A., Richter, L., & Kotler, J. A. (2022). The Future of Parenting Programs: III Uptake and Scale. *Parenting*, *22*(3), 258-275. https://doi.org/10.1080/15295192.2022.2086809

Britto, P. R., Ponguta, L. A., Reyes, C., & Karnati, R. (2015). *Systematic Review of Parenting Programmes for Young Children*. https://www.unicef.org/earlychildhood/files/P_Shanker_final__Systematic_Review_of_Parenting_ECD_Dec_ 15_copy.

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Brown, C. H., Sloboda, Z., Faggiano, F., Teasdale, B., Keller, F., Burkhart, G., . . . Methodology, G. (2013). Methods for Synthesizing Findings on Moderation Effects Across Multiple Randomized Trials. *Prevention Science*, *14*(2), 144-156. https://doi.org/10.1007/s11121-011-0207-8

Cappa, C., & Dam, H. (2014). Prevalence of and risk factors for violent disciplinary practices at home in Viet Nam. *Journal of interpersonal violence*, *29*(3), 497-516. https://doi.org/10.1177/0886260513505215

Casillas, K. L., Fauchier, A., Derkash, B. T., & Garrido, E. F. (2016). Implementation of evidence-based home visiting programs aimed at reducing child maltreatment: A

meta-analytic review. *Child Abuse & Neglect*, *53*, 64-80. https://doi.org/10.1016/j.chiabu.2015.10.009

Chaffin, M., Funderburk, B., Bard, D., Valle, L. A., & Gurwitch, R. (2011). A combined motivation and parent–child interaction therapy package reduces child welfare recidivism in a randomized dismantling field trial. *Journal of Consulting and Clinical Psychology*, *79*(1), 84-95. https://doi.org/10.1037/a0021227

Chang, L., Lu, H. J., Lansford, J. E., Skinner, A. T., Bornstein, M. H., Steinberg, L., . . . Bacchini, D. (2019). Environmental harshness and unpredictability, life history, and social and academic behavior of adolescents in nine countries. *Developmental Psychology*, *55*(4), 890-903. https://doi.org/10.1037/dev0000655

Chen, M., & Chan, K. L. (2016). Effects of Parenting Programs on Child Maltreatment Prevention: A Meta-Analysis. *Trauma, Violence, & Abuse*, *17*(1), 88-104. https://doi.org/10.1177/1524838014566718

Chiesa, A. E., Kallechey, L., Harlaar, N., Ford, C. R., Garrido, E. F., Betts, W. R., & Maguire, S. (2018). Intimate partner violence victimization and parenting: A systematic review. *Child Abuse & Neglect*, *80*, 285-300. https://doi.org/10.1016/j.chiabu.2018.03.028

Choi, J. K., & Becher, E. H. (2019). Supportive coparenting, parenting stress, harsh parenting, and child behavior problems in nonmarital families. *Family process*, *58*(2), 404-417. https://doi.org/10.1111/famp.12373

Cooke, E. M., Connolly, E. J., Boisvert, D. L., & Hayes, B. E. (2023). A systematic review of the biological correlates and consequences of childhood maltreatment and adverse childhood experiences. *Trauma, Violence, & Abuse*, *24*(1), 156-173. https://doi.org/10.1177/15248380211021613

Coore Desai, C., Reece, J., & Shakespeare-Pellington, S. (2017). The prevention of violence in childhood through parenting programmes: a global review. *Psychology, Health & Medicine*, *22*(sup1), 166-186. https://doi.org/10.1080/13548506.2016.1271952

Cortes Hidalgo, A. P., Thijssen, S., Delaney, S. W., Vernooij, M. W., Jansen, P. W., Bakermans-Kranenburg, M. J., . . . Tiemeier, H. (2021). Harsh Parenting and Child Brain Morphology: A Population-Based Study. *Child Maltreatment*, 1077559520986856. https://doi.org/10.1177/1077559520986856

Cowen, P. S. (2001). Effectiveness of a parent education intervention for at-risk families. *Journal for Specialists in Pediatric Nursing*, *6*(2), 73-82. https://doi.org/10.1111/j.1744-6155.2001.tb00124.x

Cuartas, J. (2022). Corporal punishment and child development in low- and- middle-income countries: Progress, challenges, and directions. *Child Psychiatry & Human Development*. https://doi.org/10.1007/s10578-022-01362-3

Cuartas, J., McCoy, D. C., Rey-Guerra, C., Britto, P. R., Beatriz, E., & Salhi, C. (2019). Early childhood exposure to non-violent discipline and physical and psychological aggression in low- and middle-income countries: National, regional, and global prevalence estimates. *Child Abuse & Neglect*, *92*, 93-105. https://doi.org/10.1016/j.chiabu.2019.03.021

Cuartas, J., Weissman, D. G., Sheridan, M. A., Lengua, L., & McLaughlin, K. A. (2021). Corporal Punishment and Elevated Neural Response to Threat in Children [https://doi.org/10.1111/cdev.13565]. *Child Development*, *92*(3), 821-832. https://doi.org/https://doi.org/10.1111/cdev.13565

deMause, L. (1974). The evolution of childhood. *the Journal of Psychohistory*, *1*(4), 503.

Devries, K., Knight, L., Petzold, M., Merrill, K. G., Maxwell, L., Williams, A., . . . Abrahams, N. (2018). Who perpetrates violence against children? A systematic

analysis of age-specific and sex-specific data. *BMJ Paediatrics Open*, *2*(e000180). https://doi.org/10.1136/bmjpo-2017-000180

Dozier, M., Dozier, D., & Manni, M. (2002). Recognizing the special needs of infants' and toddlers' foster parents: Development of a relational intervention. *Zero to Three Bulletin*, *22*, 7-13.

Durrant, J., & Ensom, R. (2012). Physical punishment of children: lessons from 20 years of research. *Canadian Medical Association Journal*, *184*(12), 1373-1377. https://doi.org/10.1503/cmaj.101314

Empey, L., Stafford, M., & Hay, C. (1999). *American delinquency: Its meaning and construction* (4 ed.). Wadsworth.

European Union. (2019). *Positive Parenting Interventions: Empowering parents with positive parenting techniques for lifelong health and well-being*. https://op.europa.eu/en/publication-detail/-/publication/d4226270-6a28-11e9-9f05-01aa75ed71a1/language-en

Euser, S., Alink, L. R., Stoltenborgh, M., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2015). A gloomy picture: a meta-analysis of randomized controlled trials reveals disappointing effectiveness of programs aiming at preventing child maltreatment. *BMC Public Health*, *15*(1), 1068. https://doi.org/10.1186/s12889-015-2387-9

Eyberg, S. (1988). Parent-Child Interaction Therapy. *Child & Family Behavior Therapy*, *10*(1), 33-46. https://doi.org/10.1300/J019v10n01_04

Fang, Z., Barlow, J., & Zhang, C. (2020). Parenting programs that address physical abuse in childhood for families of children with developmental disabilities in mainland China: systematic review and meta-regression. *Trauma, Violence, & Abuse*, *23*(2), 457-475. https://doi.org/10.1177/1524838020915599

Finger, B., Kachadourian, L. K., Molnar, D. S., Eiden, R. D., Edwards, E. P., & Leonard, K. E. (2010). Alcoholism, associated risk factors, and harsh parenting among fathers: Examining the role of marital aggression. *Addictive Behaviors*, *35*(6), 541-548. https://doi.org/10.1016/j.addbeh.2009.12.029

Frick, P. J. (1991). The Alabama parenting questionnaire. *Unpublished rating scale, University of Alabama*.

Furlong, M., McGilloway, S., Bywater, T., Hutchings, J., Smith, S. M., & Donnelly, M. (2013). Behavioural and cognitive-behavioural group-based parenting programmes for early-onset conduct problems in children aged 3 to 12 years. *Evidence-Based Child Health: A Cochrane Review Journal*, *2*(2), 318-692, Article CD008225. https://doi.org/10.1002/14651858.CD008225.pub2.

Gao, Y., Mi, X., Wang, Y., Zou, S., & Zhou, H. (2021). Association between household crowding and violent discipline and neglect of children: Analysis of Multiple Indicator Cluster Surveys in 26 low-and middle-income countries. *International Journal of Environmental Research and Public Health*, *18*, Article 1685. https://doi.org/10.3390/ijerph18041685

Gardner, F., Leijten, P., Harris, V., Mann, J., Hutchings, J., Beecham, J., . . . Landau, S. (2019). Equity effects of parenting interventions for child conduct problems: a pan-European individual participant data meta-analysis. *The Lancet Psychiatry*, *6*(6), 518-527. https://doi.org/10.1016/S2215-0366(19)30162-2

Gardner, F., Montgomery, P., & Knerr, W. (2016). Transporting evidence-based parenting programs for child problem behavior (age 3–10) between countries: Systematic review and meta-analysis. *Journal of Clinical Child & Adolescent Psychology*, *45*(6), 749-762. https://doi.org/10.1080/15374416.2015.1015134

Georgieva, S., Tomás, J. M., Navarro-Pérez, J. J., & Samper-García, P. (2022). Systematic Review and Critical Appraisal of Five of the Most Recurrently Validated Child Maltreatment Assessment Instruments from 2010 to 2020. *Trauma, Violence, & Abuse*. https://doi.org/10.1177/15248380221097694

Gershoff, E. T., Goodman, G. S., Miller-Perrin, C. L., Holden, G. W., Jackson, Y., & Kazdin, A. E. (2018). The strength of the causal evidence against physical punishment of children and its implications for parents, psychologists, and policymakers. *The American Psychologist*, *73*(5), 626-638. https://doi.org/10.1037/amp0000327

Gershoff, E. T., Lansford, J. E., Sexton, H. R., Davis-Kean, P., & Sameroff, A. J. (2012). Longitudinal links between spanking and children's externalizing behaviors in a national sample of White, Black, Hispanic, and Asian American families. *Child Development*, *83*(3), 838-843. https://doi.org/10.1111/j.1467-8624.2011.01732.x

Gershoff, E. T., Lee, S. J., & Durrant, J. E. (2017). Promising intervention strategies to reduce parents' use of physical punishment. *Child Abuse & Neglect*, *71*, 9-23. https://doi.org/10.1016/j.chiabu.2017.01.017

Gilbert, L. K., Breiding, M. J., Merrick, M. T., Thompson, W. W., Ford, D. C., Dhingra, S. S., & Parks, S. E. (2015). Childhood adversity and adult chronic disease: an update from ten states and the District of Columbia, 2010. *American Journal of Preventive Medicine*, *48*(3), 345-349. https://doi.org/10.1016/j.amepre.2014.09.006

Gilbert, R., Fluke, J., O'Donnell, M., Gonzalez-Izquierdo, A., Brownell, M., Gulliver, P., . . . Sidebotham, P. (2012). Child maltreatment: variation in trends and policies in six developed countries. *The Lancet*, *379*(9817), 758-772. https://doi.org/10.1016/S0140-6736(11)61087-8

Gilbert, R., Widom, C., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The Lancet*, *373*, 68-81. https://doi.org/10.1016/S0140-6736(08)61706-7

GISP. (2021). *Global Initiative to Support Parents – Inter-Agency Vision*. https://www.who.int/publications/m/item/global-initiative-to-support-parents

Global Partnership to End Violence Against Children. (2016). https://endcorporalpunishment.org/

GPI. (2022a). Parenting within the Public Health System in Thailand. *2023*. Retrieved 22.06.2023, from https://globalparenting.org/parenting-within-the-public-health-system-in-thailand

GPI. (2022b). ParentText, launched in South Africa! Retrieved 22.06.2023, from https://globalparenting.org/article/parenttext-launches-in-south-africa

Greene, C. A., Haisley, L., Wallace, C., & Ford, J. D. (2020). Intergenerational effects of childhood maltreatment: A systematic review of the parenting practices of adult survivors of childhood abuse, neglect, and violence. *Clinical Psychology Review*, *80*, 101891. https://doi.org/10.1016/j.cpr.2020.101891

Gubbels, J., van der Put, C. E., & Assink, M. (2019). The effectiveness of parent training programs for child maltreatment and their components: A meta-analysis. *International Journal of Environmental Research and Public Health*, *16*, 2404. https://doi.org/10.3390/ijerph16132404

Hanf, C. (1969). A two stage program for modifying maternal controlling during mother-child (MC) interaction. Paper presented at the Western Psychological Association Meeting, Vancouver, BC,1969.,

Heinen, M., Marcela Nunes, P., & Falcke, D. (2023). Parenting Programs for the Prevention of Child Maltreatment: Analysis of Systematic Reviews. *Psicologia: Teoria, e Prática*, *25*(1), ePTPCP14238. https://doi.org/10.5935/1980-6906/ePTPCP14238.en

Herrenkohl, E. C., Herrenkohl, R. C., Rupert, L. J., Egolf, B. P., & Lutz, J. G. (1995). Risk factors for behavioral dysfunction: The relative impact of maltreatment, SES, physical health problems, cognitive ability, and quality of parent-child interaction. *Child Abuse & Neglect*, *19*(2), 191-203. https://doi.org/10.1016/0145-2134(94)00116-C

Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global Prevalence of Past-year Violence Against Children: A Systematic Review and Minimum Estimates. *Pediatrics*, *137*(3), e20154079. https://doi.org/10.1542/peds.2015-4079

Humphreys, K. L., LeMoult, J., Wear, J. G., Piersiak, H. A., Lee, A., & Gotlib, I. H. (2020). Child maltreatment and depression: A meta-analysis of studies using the Childhood Trauma Questionnaire. *Child Abuse & Neglect*, *102*, 104361. https://doi.org/10.1016/j.chiabu.2020.104361

Hunter, A. A., & Flores, G. (2021). Social determinants of health and child maltreatment: a systematic review. *Pediatric Research*, *89*(2), 269-274. https://doi.org/10.1038/s41390-020-01175-x

Hutchings, J., Gardner, F., & Lane, E. (2004). Making evidence-based interventions work. *Support from the start: working with young children and their families to reduce the risks of crime and anti-social behaviour*, 69-79.

Inglis, G., Archibald, D., Doi, L., Laird, Y., Malden, S., Marryat, L., . . . Frank, J. (2018). Credibility of subgroup analyses by socioeconomic status in public health intervention evaluations: An underappreciated problem? *SSM - Population Health*, *6*, 245-251. https://doi.org/10.1016/j.ssmph.2018.09.010

Jeong, J., Pitchik, H. O., & Yousafzai, A. K. (2018). Stimulation Interventions and Parenting in Low- and Middle-Income Countries: A Meta-analysis. *Pediatrics*, *141*(4), e20173510. https://doi.org/10.1542/peds.2017-3510

Judd, N., Hughes, K., Bellis, M. A., Hardcastle, K., & Amos, R. (2023). Is parental unemployment associated with increased risk of adverse childhood experiences? A systematic review and meta-analysis. *Journal of Public Health*, fdad069. https://doi.org/10.1093/pubmed/fdad069

Kaehler, L. A., Jacobs, M., & Jones, D. J. (2016). Distilling common history and practice elements to inform dissemination: Hanf-model BPT programs as an example. *Clinical Child and Family Psychology Review*, *19*(3), 236-258.

Katz, S. N., Ambrosino, L., McGrath, M., & Sawitsky, K. (1977). Legal research on child abuse and neglect: Past and future. *Family Law Quarterly*, *11*(2), 151-184.

Kawabata, Y., Alink, L. R. A., Tseng, W.-L., van Ijzendoorn, M. H., & Crick, N. R. (2011). Maternal and paternal parenting styles associated with relational aggression in children and adolescents: A conceptual analysis and meta-analytic review. *Developmental Review*, *31*(4), 240-278. https://doi.org/10.1016/j.dr.2011.08.001

Kempe, C. H., Silverman, F. N., Steele, B. F., Droegenmueller, W., & Silver, H. K. (1962). The Battered-Child Syndrome. *JAMA, 1*, 17-24. https://doi.org/10.1001/jama.1962.03050270019004

Kennedy, S. C., Kim, J. S., Tripodi, S. J., Brown, S. M., & Gowdy, G. (2016). Does parent–child interaction therapy reduce future physical abuse? A meta-analysis. *Research on Social Work Practice*, *26*(2), 147-156. https://doi.org/10.1177/1049731514543024

Kim, H. K., Pears, K. C., Fisher, P. A., Connelly, C. D., & Landsverk, J. A. (2010). Trajectories of maternal harsh parenting in the first 3 years of life. *Child Abuse & Neglect*, *34*(12), 897-906. https://doi.org/10.1016/j.chiabu.2010.06.002

Knerr, W., Gardner, F., & Cluver, L. (2013). Improving positive parenting skills and reducing harsh and abusive parenting in low- and middle-income countries: a systematic review. *Prevention Science*, *14*(4), 352-363. https://doi.org/10.1007/s11121-012-0314-1

Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet*, *360*(9339), 1083-1088. https://doi.org/10.1016/S0140-6736(02)11133-0

Laajasalo, T., Cowley, L. E., Otterman, G., Lamela, D., Rodrigues, L. B., Jud, A., . . . Nurmatov, U. (2023). Current issues and challenges in the definition and operationalization of child maltreatment: A scoping review. *Child Abuse & Neglect*, *140*, 106187. https://doi.org/10.1016/j.chiabu.2023.106187

Labbé, J. (2005). Ambroise Tardieu: The man and his work on child maltreatment a century before Kempe. *Child Abuse & Neglect*, *29*(4), 311-324. https://doi.org/10.1016/j.chiabu.2005.03.002

Landers, A. L., McLuckie, A., Cann, R., Shapiro, V., Visintini, S., MacLaurin, B., . . . Carrey, N. J. (2018). A scoping review of evidence-based interventions available to parents of maltreated children ages 0-5 involved with child welfare services. *Child Abuse & Neglect*, *76*, 546-560. https://doi.org/10.1016/j.chiabu.2017.09.012

Lansford, J. E., Chang, L., Dodge, K. A., Malone, P. S., Oburu, P., Palmérus, K., . . . Zelli, A. (2005). Physical discipline and children's adjustment: Cultural normativeness as a moderator. *Child Development*, *76*(6), 1234-1246. https://doi.org/10.1111/j.1467-8624.2005.00847.x

Lansford, J. E., Dodge, K. A., Pettit, G. S., Bates, J. E., Crozier, J., & Kaplow, J. (2002). A 12-year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence.

Archives of Pediatrics & Adolescent Medicine, *156*(8), 824-830. https://doi.org/10.1001/archpedi.156.8.824

Leijten, P., Melendez-Torres, G. J., Knerr, W., & Gardner, F. (2016). Transported versus homegrown parenting interventions for reducing disruptive child behavior: A multilevel meta-regression study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *55*(7), 610-617. https://doi.org/10.1016/j.jaac.2016.05.003

Leijten, P., Raaijmakers, M., Wijngaards, L., Matthys, W., Menting, A., Hemink-van Putten, M., & Orobio de Castro, B. (2018). Understanding Who Benefits from Parenting Interventions for Children's Conduct Problems: an Integrative Data Analysis. *Prevention Science*, *19*(4), 579-588. https://doi.org/10.1007/s11121-018-0864-y

Leijten, P., Raaijmakers, M. A., Orobio de Castro, B., van den Ban, E., & Matthys, W. (2017). Effectiveness of the incredible years parenting program for families with socioeconomically disadvantaged and ethnic minority backgrounds. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 59-73.

Lim, N., O'Reilly, M., Russell-George, A., & Londoño, F. V. (2023). A Meta-Analysis of Parenting Interventions for Immigrants. *Prevention Science*. https://doi.org/10.1007/s11121-022-01488-9

Lippard, E. T., & Nemeroff, C. B. (2020). The devastating clinical consequences of child abuse and neglect: increased disease vulnerability and poor treatment response in mood disorders. *American Journal of Psychiatry*, *177*(1), 20-36. https://doi.org/10.1176/appi.ajp.2019.19010020

Lo, C. K. M., Ho, F. K., Emery, C., Chan, K. L., Wong, R. S., Tung, K. T. S., & Ip, P. (2021). Association of harsh parenting and maltreatment with internet addiction, and the mediating role of bullying and social support. *Child Abuse & Neglect*, *113*, 104928. https://doi.org/10.1016/j.chiabu.2021.104928

Lomanowska, A. M., Boivin, M., Hertzman, C., & Fleming, A. S. (2017). Parenting begets parenting: A neurobiological perspective on early adversity and the transmission of parenting styles across generations. *Neuroscience*, *342*, 120-139. https://doi.org/10.1016/j.neuroscience.2015.09.029

Lorenc, T., Petticrew, M., Welch, V., & Tugwell, P. (2013). What types of interventions generate inequalities? Evidence from systematic reviews. *Journal of Epidemiology and Community Health*, *67*(2), 190-193. https://doi.org/10.1136/ jech-2012-201257

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: moderators and follow-up effects. *Clinical Psychology Review*, *26*(1), 86-104. https://doi.org/10.1016/j.cpr.2005.07.004

Luster, T., & Okagaki, L. (2006). *Parenting: An ecological perspective* (2 ed.). Routledge.

Lynch, M. A. (1985). Child abuse before Kempe: An historical literature review. *Child Abuse & Neglect*, *9*(1), 7-15. https://doi.org/10.1016/0145-2134(85)90086-9

Marcus, R., Kruja, K., & Rivett, J. (2019). *What are the impacts of parenting programmes on adolescents?* gage - Gender & Adolescence: Global Evidence.

Massullo, C., De Rossi, E., Carbone, G., Imperatori, C., Ardito, R., Adenzato, M., & Farina, B. (2023). Child maltreatment, abuse, and neglect: An umbrella review of their prevalence and definitions. *Clinical Neuropsychiatry*, *20*(2), 72-99. https://doi.org/10.36131/cnfioritieditore20230201

Mathews, B., Pacella, R., Dunne, M. P., Simunovic, M., & Marston, C. (2020). Improving measurement of child abuse and neglect: A systematic review and analysis of national prevalence studies. *PLoS One*, *15*(1), e0227884. https://doi.org/10.1371/journal.pone.0227884

McCloskey L. (2011). *A systematic review of parenting interventions to prevent child abuse tested with Randomised Control Trial (RCT) design in high income countries*.

https://www.svri.org/sites/default/files/attachments/2016-04-13/systematicreviewParent.pdf

McCoy, A., Melendez-Torres, G. J., & Gardner, F. (2020). Parenting interventions to prevent violence against children in low- and middle-income countries in East and Southeast Asia: A systematic review and multi-level meta-analysis. *Child Abuse & Neglect*, *103*, 104444. https://doi.org/10.1016/j.chiabu.2020.104444

Meinck, F., Steinert, J., Sethi, D., Gilbert, R., Bellis, M. A., Mikton, C., . . . Baban, A. (2016). *Measuring and monitoring national prevalence of child maltreatment: a practical handbook*. https://apps.who.int/iris/handle/10665/343818

Mejia, A., Haslam, D., Sanders, M. R., & Penman, N. (2017). Protecting Children in Low- and Middle-Income Countries from Abuse and Neglect: Critical Challenges for Successful Implementation of Parenting Programmes. *The European Journal of Development Research*, *29*(5), 1038-1052. https://doi.org/10.1057/s41287-017-0105-4

Mejía, A., Leijten, P., Lachman, J. M., & Parra-Cardona, J. R. (2017). Different Strokes for Different Folks? Contrasting Approaches to Cultural Adaptation of Parenting Interventions. *Prevention Science*, *18*(6), 630-639. https://doi.org/10.1007/s11121-016-0671-2

Melendez-Torres, G. J., Leijten, P., & Gardner, F. (2019). What are the Optimal Combinations of Parenting Intervention Components to Reduce Physical Child Abuse Recurrence? Reanalysis of a Systematic Review using Qualitative Comparative Analysis. *Child Abuse Review*, *28*(3), 181-197. https://doi.org/10.1002/car.2561

Moody, G., Cannings-John, R., Hood, K., Kemp, A., & Robling, M. (2018). Establishing the international prevalence of self-reported child maltreatment: a systematic review by maltreatment type and gender. *BMC Public Health*, *18*(1), 1164. https://doi.org/10.1186/s12889-018-6044-y

Morello, L., Caputi, M., Scaini, S., & Forresi, B. (2022). Parenting programs to reduce recurrence of child maltreatment in the family environment: a systematic review. *International Journal of Environmental Research and Public Health*, *19*(20), 13283. https://doi.org/10.3390/ijerph192013283

Nogueira, S., Abreu-Lima, I., Canário, C., & Cruz, O. (2021). Group Triple P–A randomized controlled trial with low-income mothers. *Children and Youth Services Review*, *121*, 105862. https://doi.org/10.1016/j.childyouth.2020.105862

Patterson, G. R. (1982). *Coercive family process* (Vol. 3). Castalia Publishing Company.

Penner-Goeke, L., Kaminski, L., Sulymka, J., Mitchell, B., Peters, S., & Roos, L. E. (2020). A meta-analysis of group-based parenting programs for preschoolers: Exploring Moderation by Participants, Programs, and Time [Preprint].

Pinquart, M. (2017). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. *Developmental Psychology*, *53*(5), 873-932. https://doi.org/10.1037/dev0000295

Pontes, L. B., Siqueira, A. C., & Williams, L. C. d. A. (2019). A systematic literature review of the ACT Raising safe kids parenting program. *Journal of Child and Family Studies*, *28*, 3231-3244. https://doi.org/10.1007/s10826-019-01521-6

Prevoo, M. J. L., Stoltenborgh, M., Alink, L. R. A., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2017). Methodological Moderators in Prevalence Studies on Child Maltreatment: Review of a Series of Meta-Analyses. *Child Abuse Review*, *26*(2), 141-157. https://doi.org/10.1002/car.2433

Prinz, R. J., & Shapiro, C. J. (2017). Shifting the Needle on Child Maltreatment. In M. Sanders & T. Mazzucchelli (Eds.), *The Power of Positive Parenting: Transforming the Lives of Children, Parents, and Communities Using the Triple P System* (pp. 422).

Oxford University Press. https://doi.org/10.1093/med-psych/9780190629069.003.0039

Pundir, P., Saran, A., White, H., Subrahmanian, R., & Adona, J. (2020). Interventions for reducing violence against children in low-and middle-income countries: An evidence and gap map. *Campbell Systematic Reviews*, *16*(4), e1120. https://doi.org/10.1002/cl2.1120

Rehfuess, E. A., Stratil, J. M., Scheel, I. B., Portela, A., Norris, S. L., & Baltussen, R. (2019). The WHO-INTEGRATE evidence to decision framework version 1.0: integrating WHO norms and values and a complexity perspective. *BMJ Global Health*, *4*(Suppl 1), e000844. https://doi.org/10.1136/bmjgh-2018-000844

Riem, M. M. E., Lodder, P., Guo, J., Vrielink-Verpaalen, M., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & De Carli, P. (2021). Predictive Models of Maternal Harsh Parenting During COVID-19 in China, Italy, and Netherlands. *Frontiers in Psychiatry*, *12*. https://doi.org/10.3389/fpsyt.2021.722453

Runyan, D. K., Dunne, M. P., Zolotor, A. J., Madrid, B., Jain, D., Gerbaka, B., . . . Youssef, R. M. (2009). The development and piloting of the ISPCAN Child Abuse Screening Tool—Parent version (ICAST-P). *Child Abuse & Neglect*, *33*(11), 826-832. https://doi.org/10.1016/j.chiabu.2009.09.006

Saini, S. M., Hoffmann, C. R., Pantelis, C., Everall, I. P., & Bousman, C. A. (2019). Systematic review and critical appraisal of child abuse measurement instruments. *Psychiatry Research*, *272*, 106-113. https://doi.org/10.1016/j.psychres.2018.12.068

Sanders, M. R. (1999). Triple P-Positive Parenting Program: Towards an Empirically Validated Multilevel Parenting and Family Support Strategy for the Prevention of Behavior and Emotional Problems in Children. *Clinical child and family psychology review*, *2*(2), 71-90. https://doi.org/10.1023/A:1021843613840

Sanders, M. R., Baker, S., & Turner, K. M. T. (2012). A randomized controlled trial evaluating the efficacy of Triple P Online with parents of children with early-onset conduct problems. *Behaviour Research and Therapy*, *50*(11), 675-684. https://doi.org/10.1016/j.brat.2012.07.004

Santini, P. M., & Williams, L. C. (2016). Parenting programs to prevent corporal punishment: A systematic review. *Paidéia*, *26*(63), 121-129. https://doi.org/10.1590/1982-4372663201614

Santo, T., Campbell, G., Gisev, N., Tran, L. T., Colledge, S., Di Tanna, G. L., & Degenhardt, L. (2021). Prevalence of childhood maltreatment among people with opioid use disorder: A systematic review and meta-analysis. *Drug and Alcohol Dependence*, *219*, 108459. https://doi.org/10.1016/j.drugalcdep.2020.108459

Scaramella, L. V., Neppl, T. K., Ontai, L. L., & Conger, R. D. (2008). Consequences of socioeconomic disadvantage across three generations: parenting behavior and child externalizing problems. *Journal of Family Psychology*, *22*(5), 725. https://doi.org/10.1037/a0013190

Law on amendments to the Parental Code, (1979).

Simons, R. L., Whitbeck, L. B., Conger, R. D., & Wu, C.-I. (1991). Intergenerational transmission of harsh parenting. *Developmental Psychology*, *27*(1), 159-171. https://doi.org/10.1037/0012-1649.27.1.159

Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., . . . Dees, J. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent behavior*, *14*(1), 13-29. https://doi.org/10.1016/j.avb.2006.03.006

Stoltenborgh, M., Bakermans-Kranenburg, M. J., van Ijzendoorn, M. H., & Alink, L. R. A. (2013). Cultural–geographical differences in the occurrence of child physical abuse?

A meta-analysis of global prevalence. *International Journal of Psychology*, *48*(2), 81-94. https://doi.org/10.1080/00207594.2012.697165

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & van IJzendoorn, M. H. (2015). The prevalence of child maltreatment across the globe: Review of a series of meta-analyses. *Child Abuse Review*, *24*(1), 37-50. https://doi.org/10.1002/car.2353

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect*, *22*(4), 249-270. https://doi.org/10.1016/S0145-2134(97)00174-9

Strayhorn, J. M., & Weidman, C. S. (1988). A Parent Practices Scale and Its Relation to Parent and Child Mental Health. *Journal of the American Academy of Child & Adolescent Psychiatry*, *27*(5), 613-618. https://doi.org/10.1097/00004583-198809000-00016

Terwee, C. B., Prinsen, C. A. C., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., . . . Mokkink, L. B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome measures: a Delphi study. *Quality of Life Research*, *27*(5), 1159-1170. https://doi.org/10.1007/s11136-018-1829-0

The Lancet. (1880). The punishment of children [Editorial]. 822-826.

UN. (1989). *Convention on the Rights of the Child*. https://www.ohchr.org/sites/default/files/crc.pdf

UN. (2007). *GRC General Comment No. 8 (2006).The right of the child to protection from corporal punishment and other cruel or degrading forms of punishment (U.N. CRC/C/GC/8)*.

UN. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development. Resolution A/RES/70/1. Adopted September, 2015*. United Nations. https://sdgs.un.org/2030agenda

UNICEF. (2014a). Children in danger: Act to end violence against children. *New York*. https://downloads.unicef.org.uk/wp-content/uploads/2014/10/Unicef_ChildreninDanger_ViolencereportW.pdf

UNICEF. (2014b). *Hidden in plain sight: A statistical analysis of violence against children*. https://data.unicef.org/resources/hidden-in-plain-sight-a-statistical-analysis-of-violence-against-children/

UNICEF. (2017). A familiar face: Violence in the lives of children and adolescents. https://data.unicef.org/resources/a-familiar-face/

UNICEF. (2020). *Designing parenting programmes for violence prevention: A guidance note*. https://www.unicef.org/media/77866/file/Parenting-Guidance-Note.pdf

UNICEF. (2021). *Child Protection Strategy 2021–2030*. https://www.unicef.org/media/104416/file/Child-Protection-Strategy-2021.pdf

UNICEF Serbia. (2019). *Scaling-up Playful Parenting* https://www.unicef.org/serbia/en/documents/scaling-playful-parenting

UNODC. (2009). *Guide to implement family skills training programmes for drug abuse prevention*. https://www.unodc.org/documents/prevention/family-guidelines-E.pdf

van der Put, C. E., Assink, M., Gubbels, J., & Boekhout van Solinge, N. F. (2018). Identifying Effective Components of Child Maltreatment Interventions: A Meta-analysis. *Clinical Child and Family Psychology Review*, *21*(2), 171-202. https://doi.org/10.1007/s10567-017-0250-5

Van Mourik, K., Crone, M. R., De Wolff, M. S., & Reis, R. (2017). Parent training programs for ethnic minorities: A meta-analysis of adaptations and effect. *Prevention Science*, *18*, 95-105.

Vlahovicova, K., Melendez-Torres, G. J., Leijten, P., Knerr, W., & Gardner, F. (2017). Parenting Programs for the Prevention of Child Physical Abuse Recurrence: A Systematic Review and Meta-Analysis. *Clinical Child Family Psychology Review*, *20*(3), 351-365. https://doi.org/10.1007/s10567-017-0232-7

Walsh, D., McCartney , G., Smith, M., & Armour, G. (2019). Relationship between childhood socioeconomic position and adverse childhood experiences (ACEs): a systematic review. *Journal of Epidemiology and Community Health*, *73*(12), 1087-1093. https://doi.org/10.1136/jech-2019-212738

Wang, M.-T., & Kenny, S. (2014). Longitudinal Links Between Fathers' and Mothers' Harsh Verbal Discipline and Adolescents' Conduct Problems and Depressive Symptoms. *Child Development*, *85*(3), 908-923. https://doi.org/10.1111/cdev.12143

Warren, J. M., Halpin, S. A., Hanstock, T. L., Hood, C., & Hunt, S. A. (2022). Outcomes of Parent-Child Interaction Therapy (PCIT) for families presenting with child maltreatment: A systematic review. *Child Abuse & Neglect*, *134*, 105942. https://doi.org/10.1016/j.chiabu.2022.105942

Webster-Stratton, C. (1984). Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Consulting and clinical Psychology*, *52*(4), 666-678. https://doi.org/10.1037/0022-006X.52.4.666

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: strengthening parenting competencies. *Journal of consulting and clinical psychology*, *66*(5), 715-730. https://doi.org/10.1037/0022-006X.66.5.715

Whitcombe-Dobbs, S., & Tarren-Sweeney, M. (2019). What evidence is there that parenting interventions reduce child abuse and neglect among maltreating families? A systematic review. *Developmental Child Welfare*, *1*(4), 374-393. https://doi.org/10.1177/2516103219893383

White, S. O., & Straus, M. A. (1981). The implications of family violence for rehabilitation strategies. In S. E. Martin, L. B. Sechrest, & R. Redner (Eds.), *New directions in the rehabilitation of criminal offenders* (pp. 255-288). National Academy Press.

WHO. (1999). *Report of the consultation on child abuse prevention, 29-31 March 1999, WHO, Geneva*. https://apps.who.int/iris/handle/10665/65900?locale-attribute=ar&utm_source=transaction&utm_medium=email

WHO. (2006). *Preventing child maltreatment: a guide to taking action and generating evidence* (9241563176). https://apps.who.int/iris/bitstream/handle/10665/43499/92?sequence=1

WHO. (2016). *INSPIRE: Seven strategies for ending violence against children*. https://www.who.int/publications/i/item/9789241565356

WHO. (2023). WHO guidelines on parenting interventions to prevent maltreatment and enhance parent-child relationships with children aged 0–17 years. https://www.who.int/teams/social-determinants-of-health/violence-prevention/parenting-guidelines

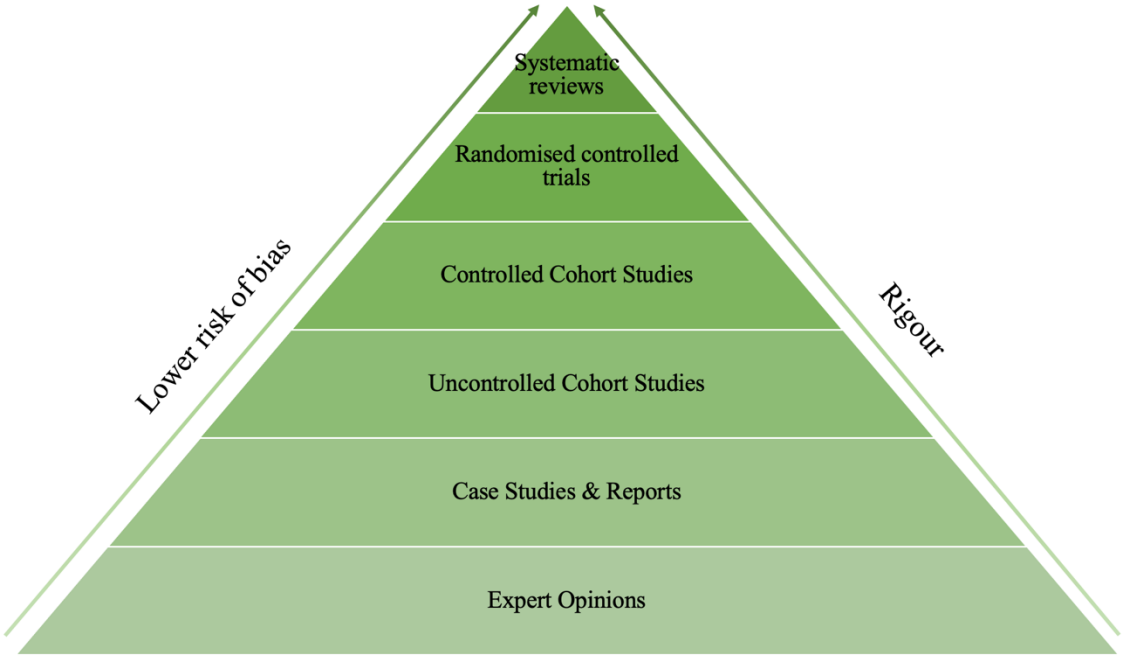
Yoon, S., Speyer, R., Cordier, R., Aunio, P., & Hakkarainen, A. (2020). A systematic review evaluating psychometric properties of parent or caregiver report instruments on child maltreatment: part 2: internal consistency, reliability, measurement error, structural validity, hypothesis testing, cross-cultural validity, and criterion validity. *Trauma, Violence, & Abuse*, *22*(5), 1296-1315. https://doi.org/10.1177/1524838020915591

3 Methodology

This thesis chooses as its overarching methodology systematic reviews of published quantitative studies.

The hierarchy of evidence ranks research designs based on their rigour and risk of bias (Evans, 2003). Well-conducted systematic reviews are generally considered as at the top of the hierarchy by providing the "best available evidence" for intervention studies, followed by randomised controlled trials (RCTs; see Figure 3.1).

Figure 3.1 Original hierarchy of evidence



3.1 Systematic review

Cochrane defines a systematic review as "attempts to identify, appraise and synthesise all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question" (Higgins & Green, 2008). A systematic review synthesises effectiveness evidence across all available studies relevant for a clearly formulated research question, often using the PICO (Population, Intervention, Control, Outcome) question format. It then critically

appraises included studies and collects and describes findings from the studies. The key criteria of systematic reviews in intervention research are: i.) a clearly stated research question and pre-defined eligibility criteria for studies; ii.) a reproducible methodology; iii.) a systematic and comprehensive search to identify all eligible studies; iv.) an assessment of the validity of the findings by examining the risk of bias; and v.) a systematic presentation and synthesis of the characteristics and findings of included studies (Higgins et al., 2019; Higgins et al., 2022).

This DPhil thesis focuses on RCTs as the primary intervention evaluation design. RCTs are considered the gold standard of research design (Evans, 2003) due to their reliability to measure an isolated intervention effects by adjusting for confounding variables. However, researchers have criticised RCTs for its disconnect to real world settings and lack of accounting for complexity in the intervention and its implementation (Rod et al., 2023). Particularly, questions addressing *why* an intervention works might be better answered using realist evaluation. Nevertheless, this research project focuses on the *do interventions work over time* and *for whom*, therefore, RCTs that have been conducted properly are a valid research method when examining overarching effects of interventions (Deaton & Cartwright, 2018). Consequently, it is the role of a systematic reviewer to critically appraise RCTs of intervention effects on multiple domains of bias. The most common risk of biases are described by Higgins et al. (2011) as i.) selection bias due to inadequate generation of a random sequence in the randomisation process, or due to inadequate concealment of the allocations prior to assignment; ii.) performance bias due to unblinding of participants and researchers; iii.) detection bias due to unblinding of outcome assessors; iv.) attrition bias due to amount, nature or handling of incomplete outcome data; and v.) reporting bias due to selective outcome reporting, and hiding of "null" findings. Other sources of bias include

developer involvement in the evaluation process, unreliable and invalid measurement instruments, and the influence of funding partners in the research process.

Over the past decade, there has been a substantial growth in published systematic reviews, making it a well-known method for policymakers and practitioners.
There are several established guidelines to ensure rigorous synthesis of intervention studies, such as the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, an evidence-based minimum set of items for reporting in systematic reviews and meta-analysis (Page et al., 2021).

Despite the advantages of systematic reviews, this method comes with limitations. The synthesis of the intervention may disguise distinctions between the primary studies with regard to the nature of the intervention. Moreover, systematic reviews are at risk of over-generalisation, and may mask that some parenting interventions did not yield a positive effect. Lastly, findings of systematic reviews are not always consistent with findings of large-scale, high-quality trials, potentially resulting in uninformed decision making or misleading conclusions.

3.2 Meta-analysis

3.2.1 Traditional meta-analysis

This DPhil thesis will further apply meta-analytic techniques to answer RQ 2 & 3.
Meta-analyses are the statistical combination of results from two or more separate studies (Deeks et al., 2022), and are a supplementary method to systematic reviews. A meta-analysis is an aggregation of effect sizes across studies to produce an overall statistic that summarises the effectiveness of an intervention compared with a control. Meta-analyses can also contrast results, identify patterns of disagreement among results, and explore other important relationships between variables (i.e., moderation or mediation). Meta-analyses improve precision in an overarching summary effect by including all available evidence. However,

there may considerable variation in the quality of the underlying evidence, and decisions during the systematic review process may compromise the certainty in the overarching summary effect. The Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) is a transparent framework for evaluating the quality for the summary effects of evidence in systematic reviews (Guyatt et al., 2011). It is a widely accepted tool across research and practice (e.g., the National Institute for Health and Clinical Excellence, the WHO). GRADE specifies four levels of quality for the body of evidence with the highest rating for randomised trials, and the lowest for observational studies or case series/reports. Therefore, evidence based on randomised controlled trials starts at high quality, however, certainty might be downgraded based on several GRADE domains, namely risk of bias, imprecision or inconsistency in the summary effect, indirectness of the evidence, and publication bias.

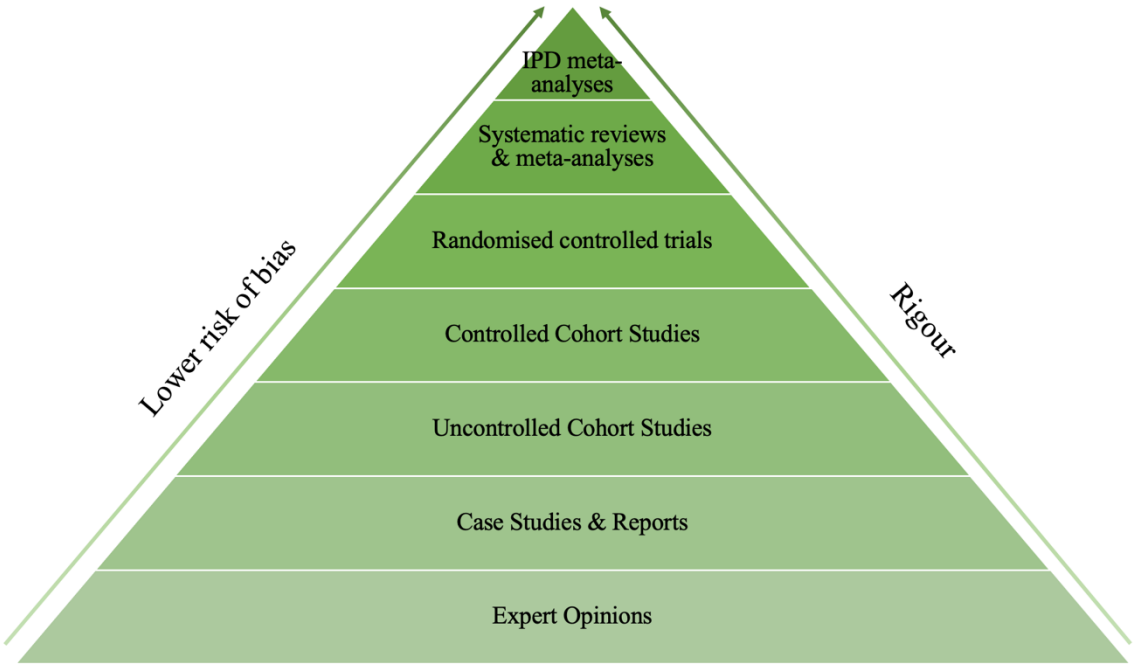
Besides establishing an overarching summary effect, an additional goal of meta-analysis is to estimate the across-study variance in the effect or relationship estimates and the factors that explain this variance (Aguinis et al., 2011). Thus, it is a common approach to identify subgroups in a meta-analysis (often referred to as meta-regression). However, the validity of moderation analysis in traditional meta-analysis is limited (Fisher et al., 2017; Lipsey, 2003; Petticrew et al., 2012). This is because traditional meta-analyses test moderators only on trial level. For example, level of education may only be included as the sample mean, thus, losing substantial power and meaningful information, such as whether within a trial parents of higher or lower education had more or less effect from an intervention. In addition, there is a high risk for confounding of moderators at trial level. For example, the mean level of education in a trial may be correlated with the baseline levels of violence in a sample. On the other hand, it is useful for policymakers to know whether group composition in a parenting intervention, such as interventions that are largely delivered to

parents with low levels of education, can be effective. Thus, results from moderation analyses in traditional meta-analyses need to be interpreted with caution since they only reflect whether trial composition impacts the effectiveness of an intervention.

3.3.2 Individual participant data meta-analysis

Individual participant data (IPD) meta-analysis (or integrative data analysis) combines the two above stated methodologies (traditional meta-analysis and RCT), and overcomes many of their limitations (Curran & Hussong, 2009). This alternative to traditional meta-analysis synthesises individual level data from multiple trials, and makes use of the variance between and within trials. IPD meta-analysis gains power, specificity and generalisability (Brown et al., 2013), which are important necessities to explore individual-level and study-level sources of heterogeneity in treatment effect (Lyman & Kuderer, 2005; van Walraven, 2010).

Figure 3.2 Updated hierarchy of evidence



Consequently, the hierarchy of evidence has undergone revisions by numerous scholars over the years, with IPD meta-analysis now positioned at the top and regarded as the gold standard of evidence synthesis (Figure 3.2). However, the implementation of this method comes with challenges (for a more detailed discussion, see Debray et al., 2015). Notably, the synthesis of primary data becomes challenging when studies have measured different outcomes and covariates; when important sample descriptions are missing; or when randomisation, contextual, and follow-up procedures differ (Burdett & Stewart, 2002). Moreover, IPD meta-analysis is at risk for bias when only a specific subset of relevant studies is sought (reviewer selection bias), or only studies with specific results are available (publication bias) (Ahmed et al., 2012). Lastly, IPD meta-analysis are extremely time consuming and therefore limited in the number of studies that can be harmonised. Yet, despite its challenges, IPD meta-analysis are more powerful, and least biased for subgroup analysis (Thompson & Higgins, 2005). Using pooled data from multiple trials provides an ideal means for clarifying whether the treatment effect of parenting interventions varies by baseline characteristics.

Due to the growing recognition of IPD meta-analysis as a gold standard approach of evidence synthesis, standards for conducting and reporting IPD meta-analysis have been formulated. To address the specific requirements of IPD systematic reviews and meta-analysis, PRISMA developed a stand-alone extension to its previous statement (Stewart et al., 2015) The PRISMA-IPD extension includes three special items. Notably, one of these items is dedicated to exploring variation in benefit through moderation analysis.

3.3 Certainty and credibility in moderation analysis

Subgroup analysis refers to any comparison of intervention outcomes between subsets of participants defined by pre-specified and varying characteristics. They can be exogenous or endogenous to the intervention being studied. Exogeneous subgroups are not affected by the intervention or correlated with its receipt, whereas endogenous subgroups are affected by the

intervention and correlated with receiving an intervention. In randomised trials, subgroups can be defined by baseline characteristics and, due to the study design, always as exogenous (Kraemer et al., 2002).

Exogenous subgroups can be referred to as moderators of treatment effect if they are defined by characteristics preceding the treatment. Simply said, moderators examine whether the treatment effect varies among the levels of the baseline factor (Kraemer et al., 2006). Moderation analyses provide a methodologically rigorous way to address nuances between differential effectiveness by extending the "does it work" question to "for whom?". Yet, moderation analyses can be misleading if they test data-driven hypotheses, employ inappropriate statistical methods, and fail to account for multiple testing (Wang & Ware, 2013).

Researchers identified four major methodological challenges when conducting subgroup analyses. These include (a) clearly specifying confirmatory versus exploratory tests, (b) limited power to detect subgroup effects, (c) pre-specification of hypotheses and subgroups versus post-hoc analysis and contextualisation of results, and (d) adjusting for multiple comparisons which increase false-positive error rates (Bloom & Michalopoulos, 2013; DISCO Study group, 2014; Supplee et al., 2013; Wang & Ware, 2013). This doctoral thesis aims to overcome these challenges by clearly specifying the analyses as confirmatory or exploratory, increasing power through the use of individual participant data, pre-registering all moderation analyses, and limiting the number of moderation tests.

3.4 Overview of methodology for each specific research question

The overarching methodology for each empirical chapter is illustrated in Table 3.1.

The specific limitations of the analyses chosen are discussed within the empirical chapters.

Table 3.1 Summary of methodology for the three empirical chapters

Research question	Empirical chapter	Research design	Analysis	Data sources
RQ1) How similar are child maltreatment and harsh parenting instruments in the physical and emotional violent behaviours they include?	Chapter 4 (*DPhil Paper 1*)	Systematic review	Qualitative: Thematic analysis; Quantitative: Jaccard Index	Systematic review of child maltreatment instruments & systematic review of parenting intervention; Original instrument publications
RQ2) What are the effects over time of parenting interventions to reduce physical and emotional violence?	Chapter 5 (*DPhil Paper 2*)	Systematic review & traditional aggregate-level meta-analysis	Robust variance estimation meta-analysis	Aggregate-level data of randomised controlled trials of social learning theory-based parenting interventions
RQ3) Do parenting interventions have differential effects in reducing violent parenting behaviours for families facing social disadvantage?	Chapter 6 (*DPhil Paper 3*)	Study 1: Systematic review & traditional aggregate-level meta-regression; Study 2: Systematic review & meta-analysis using a harmonised data set of individual participant data	Study 1: Robust variance estimation meta-analysis; Study 2: Multi-level modeling	Study 1: Aggregate-level data of randomised controlled trials of social learning theory-based parenting interventions; Study 2: Individual participant data of European randomised controlled trials of the Incredible Years programme

References

Aguinis, H., Gottfredson, R. K., & Wright, T. A. (2011). Best-practice recommendations for estimating interaction effects using meta-analysis. *Journal of Organizational Behavior*, *32*(8), 1033-1043. https://doi.org/10.1002/job.719

Ahmed, I., Sutton, A. J., & Riley, R. D. (2012). Assessment of publication bias, selection bias, and unavailable data in meta-analyses using individual participant data: a database survey. *BMJ*, *344*, d7762. https://doi.org/10.1136/bmj.d7762

Bloom, H. S., & Michalopoulos, C. (2013). When is the Story in the Subgroups? *Prevention Science*, *14*(2), 179-188. https://doi.org/10.1007/s11121-010-0198-x

Brown, C. H., Sloboda, Z., Faggiano, F., Teasdale, B., Keller, F., Burkhart, G., . . . Methodology, G. (2013). Methods for Synthesizing Findings on Moderation Effects Across Multiple Randomized Trials. *Prevention Science*, *14*(2), 144-156. https://doi.org/10.1007/s11121-011-0207-8

Burdett, S., & Stewart, L. A. (2002). A comparison of the results of checked versus unchecked individual patient data meta-analyses. *International Journal of Technology Assessment in Health Care*, *18*(3), 619-624. https://doi.org/10.1017/S0266462302000454

Curran, P. J., & Hussong, A. M. (2009). Integrative data analysis: the simultaneous analysis of multiple data sets. *Psychological Methods*, *14*(2), 81-100. https://doi.org/10.1037/a0015914

Deaton, A., & Cartwright, N. (2018). Understanding and misunderstanding randomized controlled trials. *Social Science & Medicine*, *210*, 2-21. https://doi.org/10.1016/j.socscimed.2017.12.005

Debray, T. P., Moons, K. G., van Valkenhoef, G., Efthimiou, O., Hummel, N., Groenwold, R. H., . . . GetReal Methods Review, G. (2015). Get real in individual participant data

(IPD) meta-analysis: a review of the methodology. *Research Synthesis Methods*, *6*(4), 293-309. https://doi.org/10.1002/jrsm.1160

Deeks, J. J., Higgins, J. P., & Altman, D. G. (2022). Chapter 10: Analysing data and undertaking meta-analyses. In J. P. T. Higgins, J. Thomas, J. Chandler, M. Cumpston, T. Li, M. J. Page, & V. A. Welch (Eds.), *Cochrane handbook for systematic reviews of interventions*. Cochrane.

DISCO Study group. (2014). Subgroup analyses in randomised controlled trials: cohort study on trial protocols and journal publications. *BMJ*, *349*, g4539. https://doi.org/10.1136/bmj.g4539

Evans, D. (2003). Hierarchy of evidence: a framework for ranking evidence evaluating healthcare interventions. *Journal of clinical nursing*, *12*(1), 77-84. https://doi.org/10.1046/j.1365-2702.2003.00662.x

Fisher, D. J., Carpenter, J. R., Morris, T. P., Freeman, S. C., & Tierney, J. F. (2017). Meta-analytical methods to identify who benefits most from treatments: daft, deluded, or deft approach? *BMJ*, *356*, j573. https://doi.org/10.1136/bmj.j573

Guyatt, G. H., Oxman, A. D., Schünemann, H. J., Tugwell, P., & Knottnerus, A. (2011). GRADE guidelines: A new series of articles in the Journal of Clinical Epidemiology. *Journal of Clinical Epidemiology*, *64*(4), 380-382. https://doi.org/10.1016/j.jclinepi.2010.09.011

Higgins, J. P., Altman, D. G., Gøtzsche, P. C., Jüni, P., Moher, D., Oxman, A. D., . . . Sterne, J. A. (2011). The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ*, *343*, d5928. https://doi.org/10.1136/bmj.d5928

Higgins, J. P., & Green, S. (2008). *Cochrane handbook for systematic reviews of interventions* (5.0.0 ed.). The Cochrane Collaboration. www.cochrane-handbook.org. (updated February 2008)

Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2019). *Cochrane handbook for systematic reviews of interventions* (2 ed.). John Wiley & Sons.

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2022). *Cochrane Handbook for Systematic Reviews of Interventions version 6.3* Cochrane. www.training.cochrane.org/handbook (updated February 2022)

Kraemer, H. C., Frank, E., & Kupfer, D. J. (2006). Moderators of Treatment OutcomesClinical, Research, and Policy Importance. *JAMA*, *296*(10), 1286-1289. https://doi.org/10.1001/jama.296.10.1286

Kraemer, H. C., Wilson, G. T., Fairburn, C. G., & Agras, W. S. (2002). Mediators and Moderators of Treatment Effects in Randomized Clinical Trials. *JAMA Psychiatry*, *59*(10), 877-883. https://doi.org/10.1001/archpsyc.59.10.877

Lipsey, M. W. (2003). Those confounded moderators in meta-analysis: Good, bad, and ugly. *The Annals of the American Academy of Political and Social Science*, *587*(1), 69-81. https://doi.org/10.1177/0002716202250791

Lyman, G. H., & Kuderer, N. M. (2005). The strengths and limitations of meta-analyses based on aggregate data. *BMC Medical Research Methodology*, *5*(1), 14. https://doi.org/10.1186/1471-2288-5-14

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., . . . Brennan, S. E. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery*, *88*, 105906. https://doi.org/10.1016/j.ijsu.2021.105906

Petticrew, M., Tugwell, P., Kristjansson, E., Oliver, S., Ueffing, E., & Welch, V. (2012). Damned if you do, damned if you don't: subgroup analysis and equity. *Journal of*

Epidemiology & Community Health, *66*(1), 95-98. https://doi.org/10.1136/jech.2010.121095

Rod, N. H., Broadbent, A., Rod, M. H., Russo, F., Arah, O. A., & Stronks, K. (2023). Complexity in Epidemiology and Public Health. Addressing Complex Health Problems Through a Mix of Epidemiologic Methods and Data. *Epidemiology*, *34*(4), 505-514. https://doi.org/10.1097/ede.0000000000001612

Stewart, L. A., Clarke, M., Rovers, M., Riley, R. D., Simmonds, M., Stewart, G., . . . Group, P.-I. D. (2015). Preferred Reporting Items for Systematic Review and Meta-Analyses of individual participant data: the PRISMA-IPD Statement. *JAMA*, *313*(16), 1657-1665. https://doi.org/10.1001/jama.2015.3656

Supplee, L. H., Kelly, B. C., MacKinnon, D. M., & Barofsky, M. Y. (2013). Introduction to the Special Issue: Subgroup Analysis in Prevention and Intervention Research. *Prevention Science*, *14*(2), 107-110. https://doi.org/10.1007/s11121-012-0335-9

Thompson, S. G., & Higgins, J. P. (2005). Can meta-analysis help target interventions at individuals most likely to benefit? *The Lancet*, *365*(9456), 341-346. https://doi.org/10.1016/S0140-6736(05)17790-3

van Walraven, C. (2010). Individual patient meta-analysis – rewards and challenges. *Journal of Clinical Epidemiology*, *63*(3), 235-237. https://doi.org/10.1016/j.jclinepi.2009.04.001

Wang, R., & Ware, J. H. (2013). Detecting moderator effects using subgroup analyses. *Prevention Science*, *14*(2), 111-120.

4 Different instrument, same content? A systematic comparison of child maltreatment and harsh parenting instruments

This is the first paper of this DPhil thesis which follows a mixed method approach to examine the overlap of child maltreatment and harsh parenting instruments.

This paper has been published in ***Trauma, Violence & Abuse***

(doi:10.1177/15248380221134290)

Sophia Backhaus[1]

Patty Leijten[2]

Franziska Meinck[3]

Frances Gardner[1]

[1]Center for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford, United Kingdom

[2]Research Institute Child Development and Education, University of Amsterdam, the Netherlands

[3]School of Social and Political Science, University of Edinburgh, United Kingdom; School of Public Health, University of Witwatersrand, Johannesburg, South Africa; Faculty of Health Sciences, North-West University, Vanderbijlpark, South Africa

Statement of Authorship

I confirm that I completed the majority of work in this study. I conceptualised the study, research question, identified all instruments, developed the advanced method, wrote the code for analyses, conducted all quantitative and qualitative analyses, and drafted the first version of this article. Patty Leijten, Frances Gardner, and Franziska Meinck contributed to the interpretation of the results, and the finalisation of the manuscript.

Abstract

Child maltreatment and harsh parenting both include harmful actions by parents towards children that are physical (e.g., spanking, slapping) or emotional (e.g., threatening, yelling). The distinction between these two constructs, in meaning and measurement, is often unclear, leading to inconsistent research and policy. This study systematically identified, reviewed, and compared parent-reported child maltreatment (n = 7) and harsh parenting (n = 18) instruments. The overlap in parenting behaviours was 73%. All physical behaviours that were measured in harsh parenting instruments (e.g., spanking, beating up) were also measured in child maltreatment instruments. Unique physical behaviours measured in maltreatment instruments include twisting body parts and choking. All emotional behaviours in maltreatment instruments were included in harsh parenting instruments, and vice versa. Our findings suggest similar, but not identical, operationalisations of child maltreatment and harsh parenting. Our findings can help guide discussions on definitions, operationalisations, and their consequences for research on violence against children.

Key points of the instrument review:

- 73% of the parenting behaviours measured in child maltreatment and harsh parenting instruments are the same.
- All physical parenting behaviours included in harsh parenting instruments are also included in child maltreatment instruments.
- Physical behaviours unique to child maltreatment instruments are burning, choking, forcing a child to stand or kneel, tying up, twisting a body part, and withholding a meal.
- All emotional behaviours included in harsh parenting instruments are also included in child maltreatment instruments and vice versa.
- There are no emotional behaviours unique to child maltreatment instruments.
- We found high levels of heterogeneity in the behaviours measured between and within harsh parenting and child maltreatment instruments, indicating that not every instrument focused on each concept respectively includes the same behaviours creating a potential risk in measurement selection.

Implications for practice, policy, and research:

- The findings call for a discussion on whether child maltreatment and harsh parenting should be seen and operationalised as similar or different constructs.
- For practice, it is important to identify which parenting behaviours may or may not distinguish child maltreatment from harsh parenting.
- In policy, it is important to clarify the parenting behaviour that was measured in the evidence used to inform policy decisions.
- For research, it is important to agree on how child maltreatment and harsh parenting should be defined and assessed.

Introduction

Decades of research on violence against children came to five firm conclusions: it has detrimental effects on child development and health, is prevalent, violates children's rights, can be prevented, and, lastly, is mainly perpetrated by parents (UNICEF, 2014a). Violent parenting is typically measured and described as "harsh parenting" or "child maltreatment". The overlap versus distinction between child maltreatment and harsh parenting, in meaning and measurement, is often unclear. Instruments play a crucial role in shaping our understanding of constructs, and their causes and consequences. As such, this study systematically analysed and quantified the overlap (vs. distinction) in content of instruments to measure child maltreatment and harsh parenting.

Child maltreatment and harsh parenting can be measured using observation, administrative data, or self-reports of children, parents, or adults retrospectively. Each measurement type comes with limitations, such as underestimating prevalence when using observation or official reports, ethical concerns when asking very young children, social desirability when asking children or parents, and a risk of recall bias when asking adolescents or adults to reflect back on their childhood (Mathews et al., 2020). Most research on violence against young children uses parent self-report instruments, and there are no instruments available for self-report by young children that are valid and reliable (Devries et al., 2018).

Defining and measuring child maltreatment

Child maltreatment is commonly defined as "all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power" (WHO, 1999). Common maltreating behaviours perpetrated by parents are physical and emotional abuse at home (Devries et al., 2018; UNICEF, 2014b). Understanding of what exactly constitutes child

maltreatment varies widely by country legislation (ChildONEurope, 2009; ISPCAN, 2008). Some countries separate corporal punishment from child maltreatment, providing a lawful basis for 'reasonable' physical force as a means to discipline a child. These countries prohibit physical beating of a child but not hitting a child on the buttocks with an open hand (e.g., Bulgaria, Jamaica, Mexico, United States, Zambia); others prohibit any form of corporal punishment (e.g. Japan, Mongolia, Scotland, South Africa, New Zealand) (Global Partnership to End Violence Against Children, 2021; ISPCAN, 2021).

In terms of measurement, there are many parental self-report instruments assessing maltreatment (Yoon et al., 2020), and their content appears to differ considerably. This might seem surprising considering that definitions of child maltreatment seem fairly consistent. However, some instruments focus on all aspects of maltreatment, while others focus on specific subtypes (Mathews et al., 2020). But even among instruments of specific subtypes of maltreatment, differences appear substantial. This may be because instruments have been developed for different populations (e.g., population sample vs. clinical subsample), and for different purposes (e.g., child protective services vs. research). Also, despite the availability of instruments directly asking about maltreatment, researchers and practitioners often use instruments that measure proxies of maltreatment, such as the Child Abuse Potential Inventory (Milner, 2004) or other inventories asking about risk factors for child maltreatment, for example, parent mental health or financial insecurity (Chen & Chan, 2016; Hood et al., 2021; Reid & Snyder, 2021).

Defining and measuring harsh parenting

Compared to child maltreatment, definitions of harsh parenting are much less consistent. First, there are studies that do not define harsh parenting and use either the operationalisation of their instruments as a way to describe the parenting behaviours they label as harsh parenting (Choi & Becher, 2019; Cortes Hidalgo et al., 2021; Kawabata et al., 2011; Lo et al.,

2021; Oshri et al., 2020), or examples instead of a comprehensive definition, such as spanking, slapping, yelling, or shouting (e.g., Brooks-Gunn & Markman, 2005; Pinquart, 2017; Thartori et al., 2019).

Second, there are studies that define harsh parenting in terms of parental attempts to control the child's behaviours or parent-child relationship by use of anger, coercion, aggression, or emotional reactions (Eltanamly et al., 2019; Kelley et al., 2015; Park & Johnston, 2020; Rueger et al., 2011). Most definitions typically include both physical and psychological behaviours. For example, Pinquart (2017) defines harsh control as "physical or verbal punishment and intrusiveness" (p. 873) and Kelly et al. (2021) identify harsh parenting practice as any parental psychological and physical aggression.

Third, there are studies that define harsh parenting using terminology from child maltreatment definitions. These studies then either differentiate harsh parenting from child maltreatment or approach it as the same construct. For example, Evans and colleagues (2012) define harsh parenting as emotional abuse and physical punishment, where the term 'abuse' suggests overlap with maltreatment. In contrast, Berthelon and colleagues (2020) defined harsh parenting as "parental strategies that incorporate these lesser forms of violence and aggression towards children", with more severe forms of violence being classified as child maltreatment (p. 2).

In terms of measurement, harsh parenting is often assessed with subscales of instruments designed to measure multiple aspects of parenting (e.g., warmth, behavioural control). Consequently, available systematic reviews of parental self-report instruments on parenting behaviours typically focus on parenting more generally, rather than on harsh parenting specifically (Blower et al., 2019; Hurley et al., 2014; Rodriguez et al., 2021). To our knowledge, no reviews focusing on instruments explicitly designed to measure harsh parenting exist.

Child maltreatment and harsh parenting in context

Since harsh parenting is sometimes seen as a milder form of violence it is often not prohibited. In many countries, harsh parenting behaviours such as corporal punishment are the norm for children, supported by cultural traditions and lack, or poor implementation, of legislation (UNICEF, 2014b). However, in past decades, research and global advocacy have shifted towards protecting children from any form of violence, including violence supported by cultural traditions. Corporal punishment and other forms of harsh parenting (e.g., repeated belittling) are now banned in many countries (ISPCAN, 2021). This shift is in line with research showing that harsh parenting behaviours can have similar detrimental consequences to children's health and development as child maltreatment (Cortes Hidalgo et al., 2021; Gershoff et al., 2018; Gilbert et al., 2009).

Strategies to prevent harsh parenting and maltreatment overlap. For example, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF)'s global strategy to end violence against children promotes support of parents and caregivers as a key strategy to prevent violent parenting (WHO, 2016). In practice, the same parenting interventions are often used to reduce harsh parenting and child maltreatment. For example, the 1-2-3 Magic Parenting Program has been separately implemented to reduce harsh parenting (Bailey et al., 2015; Bradley et al., 2003) or child maltreatment (Flaherty & Cooper, 2010), but the contents of the program (e.g., the skills taught to parents) were the same. The same holds for programs such as Triple P Positive Parenting (for harsh parenting: Morawska and Sanders (2009); for child maltreatment: Lanier et al., (2018)); and Incredible Years (for harsh parenting: Azevedo et al. (2014); for child maltreatment: Karjalainen et al. (2019)).

The conclusions we draw from research findings, and our approaches to prevention, rely on consistent definitions and operationalisations. If child maltreatment and harsh

parenting are meaningfully different constructs, but operationalised similarly in self-report instruments, there is a substantial risk that previous research has overestimated similarities in the consequences of harsh parenting, maltreatment, and prevention efforts. This is because instruments would not have differentiated between the two constructs. If, in contrast, an overlap in instruments designed to measure either child maltreatment or harsh parenting reflects a true overlap in the constructs, previous research in either field (child maltreatment or harsh parenting) may have ignored a large body of evidence when estimating prevalence rates, consequences, and prevention effects due to dissimilar terminology used in different fields for the same constructs. This highlights the need for understanding how much overlap there is in the content of instruments designed to measure either child maltreatment or harsh parenting, and identify where, if at all, instruments include parenting behaviours unique to each construct. In addition, instruments within each category (i.e., child maltreatment and harsh parenting) may be heterogeneous in the parenting behaviours they measure – instruments rarely include all symptoms or behaviours that define a construct (Fried 2018; Visontay et al., 2019).

The present study, therefore, aimed to unpack (a) whether harsh parenting and child maltreatment instruments measure similar or different parenting behaviours, and (b) how homogeneously instruments include the same parenting behaviours. The specific research questions were:

1. Which and how many physical and emotional parenting behaviours are measured in both harsh parenting and child maltreatment parent self-report instruments?
    a. Which parenting behaviours are unique to child maltreatment instruments?
    b. Which parenting behaviours are unique to harsh parenting instruments?
2. How homogeneously are parenting behaviours measured in the instruments?

a. How homogeneous are child maltreatment instruments in the behaviours they measure?
b. How homogeneous are harsh parenting instruments in the behaviours they measure?
c. How does the homogeneity across child maltreatment and harsh parenting instruments compare to the homogeneity within each instrument category?

Methods

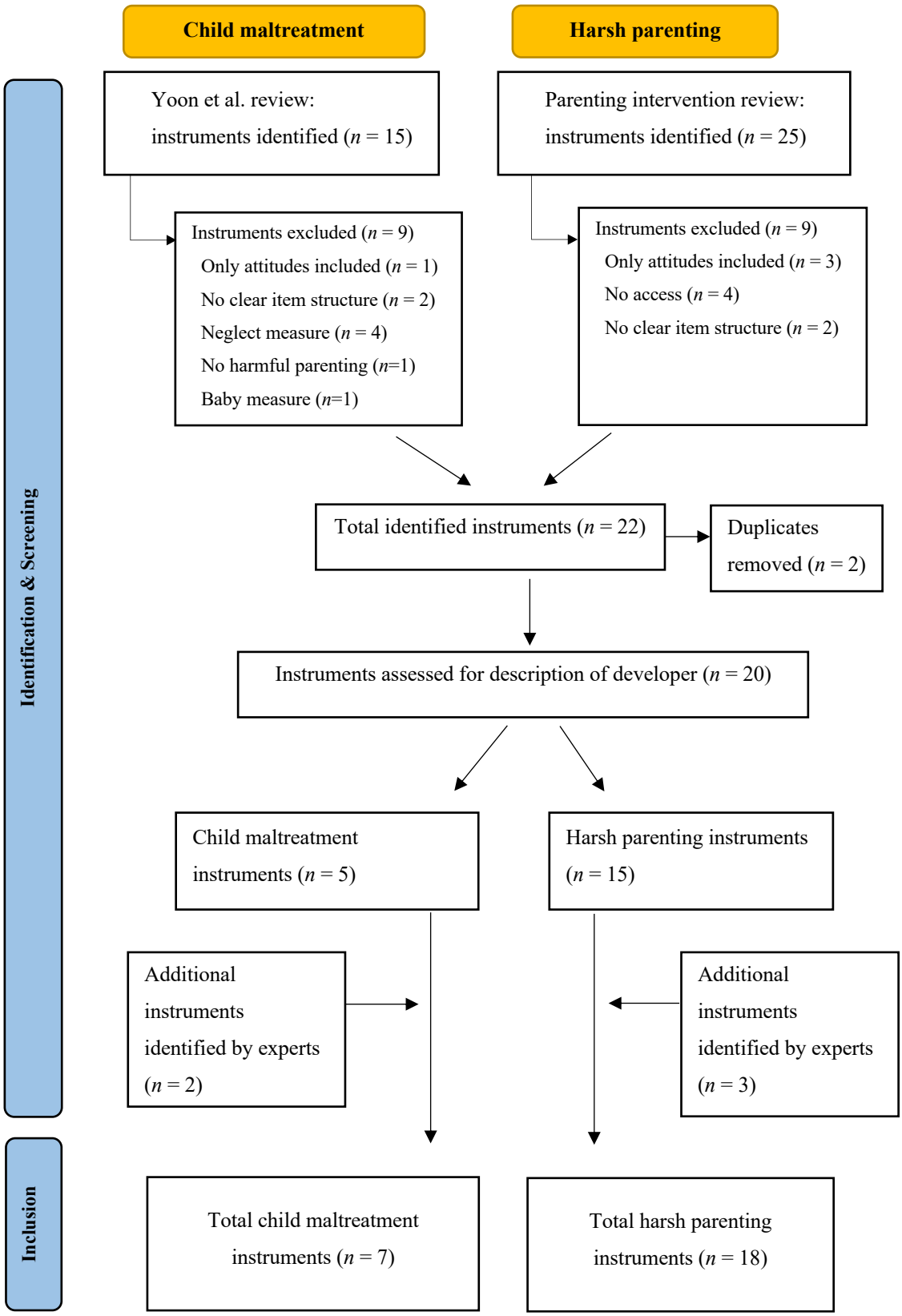
Instrument selection

We aimed to identify parent self-report child maltreatment and harsh parenting instruments that measure physical or emotional harmful parenting. For this, we used two recent systematic reviews, described in detail below. In addition, we contacted 22 leading experts with a track record with publications on parenting and child maltreatment, in the fields of psychology, psychiatry, law, social work, and global and public health, and asked them to add to our list of instruments any additional frequently used instruments (Figure 4.1).

We coded instruments as measuring child maltreatment or harsh parenting based on descriptions by the instruments' developers. Instruments were coded as child maltreatment if the developer used terms such as abuse, neglect, or child maltreatment. For example, the Conflict Tactics Scale Parent-Child is often used to measure both harsh parenting and maltreatment, but the developers Straus et al. (1998) described this instrument as a child maltreatment instrument. We, therefore, coded it as measuring child maltreatment.

When two instruments shared the same subscale or items, we treated these instruments as one (to not overestimate similarity between instruments). This applied to the Demographic and Health Surveys (DHS) and the Multiple Clusters Indicator Survey (MICS) that shared the "Child Discipline" module and used the exact same items. Similarly, we

Figure 4.1. Flowchart reflecting instrument selection



merged the ISPCAN Child Abuse Screening Tool (ICAST) and ICAST- Trial Parent versions, since both are administered to parents and are based on each other.

Exclusion criteria for instruments were: (a) not measuring physical or emotional harmful parenting behaviours (e.g., neglect only); (b) not a parent self-report instrument; (c) measuring attitudes or risk for maltreatment but not behaviours; (d) instrument having a different item structure (e.g., timing for a video, semi-structured interview); (e) instrument was unavailable; and (f) instrument focused exclusively on abusive head trauma.

Child maltreatment instruments

We identified child maltreatment instruments using the recent systematic review by Yoon and colleagues (2020), who searched six electronic databases in October 2019 and identified 15 parent self-report instruments. Of these, 6 instruments were included in the present study. We excluded the following instruments: (a) four that focused only on neglect (Child Neglect Questionnaire, Child Neglect Scales – Maternal Monitoring and Supervision scale, the Mother-Child Neglect Scale, the Mother-Child Neglect Scale- Short Form); (b) one that did not measure any harmful parenting behaviours (Parent Opinion Questionnaire); (c) two that did not have a clear item structure, but rather asked respondents to stop a movie clip when they judged a scene to have become abusive (Analog Parenting Task, Parent-Child Aggression Acceptability Movie Task); (d) one that measured attitudes towards maltreatment rather than actual parenting behaviours (Adult Adolescent Parenting Inventory-2); and (e) one that assessed abusive head trauma (Shaken Baby Syndrome awareness assessment-Short Version; see appendix 4.1 for list of excluded studies).

Harsh parenting instruments

We identified harsh parenting instruments using an ongoing global systematic review of the effects of parenting interventions to reduce harsh parenting and child maltreatment (PROSPERO registration CRD420191141844, appendix 1*).* This review used extensive

searching in 12 English and 14 non-English databases and platforms in multiple languages (English, Spanish, Chinese, Farsi, Russian, Thai), and an exhaustive grey literature search; all searches were conducted in August 2019. Search terms surrounded three conceptual categories: a. intervention, b. parenting, c. child behavioural and emotional problems or maltreatment/violence. More information on the search can be found in the online protocol of this review. We identified a total of 278 trials of which 98 measured harsh parenting with 25 unique instruments. We included parent self-report instruments that measured harsh parenting or included a subscale of a general parenting inventory that focused on harsh parenting. Even though we prefer to avoid posing a new definition, for transparency, we defined harsh parenting for the purpose of selecting instruments from this review as *physical or verbal punishment or aggression, words or acts that cause harm, potential harm, or threat of harm to a child.* A total of 18 instruments met this description (see Table 4.2). We excluded 10 instruments because (a) two instruments used open-ended questions rather than asking about specific parenting behaviour (Harsh Discipline scale, Parent Daily Telephone Reports); (b) three instruments only included attitudes (Adult Adolescent Parenting Inventory-2, Child Abuse Potential Inventory, Parent's Attributions to Child's Behavior Measure); (c) one instrument used mainly observation (HOME-Short Form); and (d) four instruments were not accessible (Angry Outbursts scale, Harsh Punishment scale, Ideas about Parenting, Nijmegen Parenting Questionnaire).

Overall included instruments

We included 7 instruments to measure child maltreatment and 18 instruments to measure behaviours that were grouped under harsh parenting (Table 4.1 & 4.2). Because we coded instruments based on what they were originally developed to measure, two instruments identified by Yoon and colleagues (2020) were coded as harsh parenting: Intensity of Parental Punishment Scale, and Parental Response to Child Misbehavior. Experts (response

Table 4.1. Included instruments measuring child maltreatment

Abb.	Instrument full name	Developer	Sub-scales	Items total	% incl. items - total scale	% included items - subscale
CCMS	Comprehensive Child Maltreatment Scale	Higgins & McCabe, 2001	5	22	82%	100%
CTS-ES	Child Trauma Screen- Exposure Score	Lang & Connell 2017	1	4	40%	100% (Potentially traumatic exposure)
CTSPC	Conflict Tactics Scale Parent-Child	Straus et al., 1998	4	27	67%	100% (Physical assault); 100% (Psychological aggression);
DHS/MICS	Child discipline module shared by DHS and MICS surveys	DHS, MICS	-	12	67%	*No subscale*
FM-CA	Family Maltreatment- Child Abuse criteria	Heyman et al., 2020	2	28	100%	100% (Physical abuse); 100% (Emotional abuse)
ICAST-P/-T	ISPCAN Screening Tool for use in Trials & Parent-version (combined)	Meinck et al.,2018; Runyan et al., 2009	4	14	65%	100% (Physical discipline); 100% (Severe physical discipline); 100% (Psychological discipline)
JVQ	Juvenile Victimization Questionnaire	Finkelhor et al., 2005	4	20	6%	40% (Child maltreatment)

Table 4.2. Included instruments measuring harsh parenting

Abb.	Instrument full name	Developer	Sub-scales	Items total	% incl. items - total scale	% incl. items - subscale
APQ	Alabama Parenting Questionnaire- Parent Form	Frick, 1991	6	42	10%	14% (Other Disciplining); 100% (Corporal Punishment)
BSI	Brief Symptom Inventory	Derogatis, 1983	9	53	9%	100% (Hostility)
CCNES	Coping with Child Negative Emotions	Fabes, 1990	6	72	17%	100% (Punitive Reactions)
DDI	Dimensions of Discipline Inventory (Part C)	Straus & Fauchier, 2007	9	26	27%	100% (Corporal punishment) 75% (Psychological Aggression)
GPBS	Ghent Parental Behavior Scale	Van Leeuwen & Vermulst 2004	9	45	8%	100% (Harsh Punishment)
HDPL	Harsh Discipline Practice List	Jiménez Flores & Flores Herrera, 2014	2	19	100%	*No subscale*
HS	Harsh Scale	Miller-Heyl et al., 1998	2	11	36%	66% (Harsh Punishment)
IPPS	Intensity of Parental Punishment Scale	Gordon et al., 1979	5	33	100%	*No subscale*
PAFAS	Parenting and Family Adjustment Scale	Sanders et al. 2014	9	30	10%	60% (Coercive Parenting)
PARQ	Parental Acceptance – Rejection Questionnaire	Rohner et al., 2005	4	60	23%	60% (Hostility/Aggression) 50% (Rejection)

PBC	Parent Behavior Checklist	Fox, 1994; Brenner & Fox, 1997	3	100	21%	70% (Discipline: Verbal and Corporal Punishment)
PBI	Parent Behavior Inventory	Lovejoy et al., 1999	2	20	25%	50% (Hostile/ Coercive)
PPI	Parent Practice Interview	Webster-Stratton, 1998	6	73	12%	100% (Physical Punishment) 27% (Harsh and Inconsistent Discipline)
PPS	Parenting Practice Scale	Strayhorn & Weidman, 1988	0	34	18%	*No subscale*
PQ	Parenting Questionnaire	McCabe & Clark, 1999	3	50	12%	5% (Warmth) 100% (Corporal Punishment)
PRCM	Parental Response to Child Misbehavior Questionnaire	Holden et al., 1995	0	12	50%	*No subscale*
PS	Parenting Scale	Arnold et al. 1993	3	32	13%	40% (Overreactivity)
PSDQ	Parenting Styles and Dimensions Questionnaire	Robinson et al. 1995	3	62	13%	40% (Authoritarian Items)

rate: 50%) recommended the inclusion of two additional child maltreatment instruments (Comprehensive Child Maltreatment Scale & Juvenile Victimization Questionnaire-Parent Version) and three harsh parenting instruments (Dimensions of Discipline Inventory; Parental Acceptance-Rejection Questionnaire; Parenting Styles and Dimensions Questionnaire). Most harsh parenting instruments were part of a more general parenting inventory that included subscales on harsh parenting. Various child maltreatment instruments measured multiple forms of child maltreatment including neglect and sexual abuse. These items were excluded from this review, even if the instrument itself was included, because neglect and sexual abuse clearly meet the definition for child maltreatment only and are not considered in measures of harsh parenting. The majority of included instruments were developed in the 1990s (median year of development: 1999). Included child maltreatment instruments were developed between 1998 to 2019 (median: 2005); harsh parenting instruments were generally somewhat older and developed between 1975 to 2014 (median: 1995).

Thematic analysis to identify parenting behaviours

We conducted a qualitative thematic analysis of items across all instruments (Braun & Clarke, 2006; Vaismoradi, Turunen, & Bondas, 2013). This method allows us to identify and analyse the text of the items and translate the content of items to concrete behaviours that describe harmful parenting behaviours. We followed a deductive approach for identifying and including physical and emotional harmful parenting behaviours as initial coding themes from the data corpus into our dataset (Hsieh & Shannon, 2005). Our initial definition of harsh parenting served as a framework to identify items measuring physical and emotional harmful parenting behaviours.

We used the phases of thematic analysis as outlined by Braun and Clarke (2006). First, we reviewed and entered all eligible items into a spreadsheet. Second, we developed initial codes and grouped items under physical or emotional harmful behaviours. Third, we

developed themes for specific parenting behaviours in a deductive and indicative coding approach. For example, “Spanked him or her on the bottom with your bare hand”, “I spank my child at least once a week”, and “I hit or spanked child using a stick, hairbrush, or some other hand object” were grouped under the specific parenting behaviour theme *spank or hit with object or hand* in the overarching category of *physical behaviours*. Some items were placed under multiple behaviours since they described a multitude of parenting behaviours. For example, “I spank, grab, slap, or hit my child most of the time” was grouped in physical behaviours, and then placed under three parenting behaviour themes (“Spank or hit with object or hand”, “Grab”, and “Slap”). Fourth, we reviewed the developed themes, and fifth, defined, merged, and named themes.

All instruments combined included 949 items. Of these, 243 items (104 from child maltreatment; 139 from harsh parenting instruments) reflected potentially harmful physical or emotional parenting behaviours. We grouped these 243 eligible items under 22 thematic clusters of parenting behaviours (Table 4.3), including 17 physical and 5 emotional parenting behaviours.

Given the purpose of the study to identify the overlap in harsh parenting and child maltreatment, items measuring other forms of parenting, such as overprotection, were not considered a relevant theme and removed from the analysis. We further excluded items if no clear indication of potential harm was given. For example, criticising children may have strong negative effects, for example if children are constantly criticised without being praised (Gunderson et al., 2018). However, constructive criticism may not hamper but support developmental growth of children. Therefore, items that were not clearly potentially harmful, were omitted (for example, “I use criticism to improve my child”). In addition, we excluded items that did not clearly reflect a concrete parenting behaviour (for example, “I am harsh

with my child", "I punish my child"), and behaviours that were not clearly directed at the child (e.g., "I complain about my child", or "I wonder if I really love my child").

Estimating similarity between child maltreatment and harsh parenting instruments

We listed all behaviours included in child maltreatment instruments and in harsh parenting instruments, and listed (a) which behaviours were identified in both instrument categories; (b) which behaviours were unique to child maltreatment instruments; and (c) which behaviours were unique to harsh parenting instruments. We then calculated the overall percentage of overlap between child maltreatment and harsh parenting instruments by taking the number of behaviours that were identified in both harsh parenting and child maltreatment instruments, and dividing it by the total number of physical and emotional parenting behaviours we identified in our thematic analysis.

Comparing homogeneity across and within instrument categories

We expected that not all instruments included the exact same parenting behaviours, as also indicated by the differing length of instruments. To quantify these varying levels of homogeneity between instruments, we calculated the Jaccard Index (Chrobak et al., 2018; Fried, 2017; Visontay et al., 2019; Wall & Lee, 2021), a measure of the similarity between two sets of binary data. The Jaccard coefficient ranges from 0 (fully heterogeneous set of instruments) to 1 (fully homogeneous set of instruments). It is calculated for each pairwise combination of instruments by taking the number of shared parenting behaviours divided by the total number of parenting behaviours across both instruments (shared and unique parenting behaviours). The analysis can be expressed as $s / (u1 + u2 + s)$, where s represents the number of behaviours two instruments share, and u1 and u2 the number of behaviours that are unique to each of the two instruments (Fried, 2017). We used Fried's criteria whereby a very weak Jaccard Index is 0.00−0.19, weak 0.20−0.39, moderate 0.40−0.59,

strong 0.60−0.79, and very strong 0.80−1.00 (proposed by Fried, 2017, based on Evans, 1996). Analyses were conducted in R Statistics using adjusted code supplied by Fried (2017).

We ran three sets of analyses. First and second, we analysed the homogeneity within child maltreatment instruments and within harsh parenting instruments. For each instrument category, we calculated (1) the overall homogeneity across all parenting behaviours; (2) the homogeneity in physical behaviours specifically; and (3) the homogeneity in emotional behaviours specifically. Third, we analysed how homogeneous harsh parenting instruments are with child maltreatment instruments. For this, we compared the share of items of each harsh parenting instrument to each child maltreatment instrument. In addition, we calculated the levels of homogeneity separately for physical and emotional parenting behaviours.

Results

Overall similarity across child maltreatment and harsh parenting instruments

We observed considerable overlap in parenting behaviours measured across harsh parenting and child maltreatment instruments. Of the 22 parenting behaviours (Table 4.3), 16 were shared between both instruments (73%). Moreover, 100% of the parenting behaviours included in harsh parenting instruments were also included in child maltreatment instruments. This indicates that most of the content for child maltreatment and harsh parenting instruments is shared rather than unique.

Similarity in physical parenting behaviours

The instruments included 17 physical behaviours. Some behaviours were more prevalent in harsh parenting instruments, whereas some more often included in child maltreatment instruments. Most prevalent behaviours included in child maltreatment instruments were ‘hit hard or hit with a fist, or beat up’, and ‘spank or hit with the hand or object’ (see Table 4.3 & 4.4a). Most instruments also measured kicking and shaking. Less

common were items on slapping, pinching, choking, burning, grabbing, throwing down or pushing, tying up, and twisting. Some behaviours were only measured by one instrument: hit with knuckles, pull hair, give child harmful food or liquid, and withhold a meal.

Spank or hit with object or hand was also one of the most frequently included physical behaviours in harsh parenting instruments, and, also similar to child maltreatment instruments, 44% included slapping a child (Table 4.3 & 4.4a).

Table 4.3 Prevalence of occurrence of thematic clusters identified in harsh parenting & child maltreatment instruments

	Child Maltreatment	Harsh Parenting
Physical behaviours	0% 50% 100% Spank/hit with object or hand 86% Slap 43% Grab 29% Hit hard/hit with fist/beat up 100% Shake 71% Hit with knuckles 14% Give harmful food/liquid 14% Kick 71% Pinch 43% Pull hair 14% Push/throw down 29% Burn 43% Choke 43% Force to stand or kneel 29% Tie up 29% Twist 29% Withhold meal 14%	0% 50% 100% Spank/hit with object or hand 89% Slap 44% Grab 22% Hit hard/hit with fist/beat up 11% Shake 11% Hit with knuckles 6% Give harmful food/liquid 6% Kick 6% Pinch 6% Pull hair 6% Push/throw down 6% Burn 0% Choke 0% Force to stand or kneel 0% Tie up 0% Twist 0% Withhold meal 0%
Emotional behaviours	0% 50% 100% Scold/yell/shout/scream 43% Threaten 57% Insult/humiliate/call names 86% Blaming/making fun of 14% Curse/swear 29%	0% 50% 100% Scold/yell/shout/scream 72% Threaten 44% Insult/humiliate/call names 28% Blaming/making fun of 17% Curse/swear 6%

Table 4.4a. Physical behaviours included in each instrument

		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17
APQ	Harsh parenting	X	X															
BSI	Harsh parenting				X													
CCNES	Harsh parenting																	
CCMS	Child maltreatment	X		X	X		X			X								
CTS-ES	Child maltreatment				X		X											
CTSPC	Child maltreatment	X	X		X			X		X	X	X			X			
DDI	Harsh parenting	X	X	X						X				X				
DHS/MICS	Child maltreatment	X			X					X								
FM-CA	Child maltreatment	X	X	X	X		X	X		X	X	X	X		X	X	X	
GPBS	Harsh parenting	X	X							X								
HDPL	Harsh parenting	X			X	X	X	X	X									
HS	Harsh parenting	X																
ICAST-P/-T	Child maltreatment	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X
IPPS	Harsh parenting	X																
JVQ	Child maltreatment	X			X		X											
PAFAS	Harsh parenting	X																

PARQ	Harsh parenting	X															
PBC	Harsh parenting	X	X														
PBI	Harsh parenting	X		X													
PPI	Harsh parenting	X	X														
PPS	Harsh parenting	X															
PQ	Harsh parenting	X	X														
PRCM	Harsh parenting	X	X														
PS	Harsh parenting	X		X													
PSDQ	Harsh parenting	X	X	X												X	

Note: P1 = Spank/hit with object or hand, P2 = Slap, P3 = Grab, P4 = Hit hard/Hit with fist/Beat up, P5 = Hit with knuckles, P6 = Kick, P7 = Pinch, P8 = Pull hair, P9 = Shake, P10 = Burn, P11 = Choke, P12 = Forced to stand or kneel, P13 = Give harmful food or liquid, P14 = Push/Shove/Throw Down, P15 = Tie up, P16 = Twist, P17 = Withhold meal

Some harsh parenting instruments included grabbing, shaking, hitting hard or with fist or beat up, whereas only one instrument measured hit with knuckles, kick, pinch, pull hair, push or throw down, and give harmful food or liquid. All eleven behaviours included in harsh parenting instruments were also included in child maltreatment instruments: (a) spank or hit child with object or hand, (b) slap, (c) pinch, (d) kick, (e) pull hair, (f) shake, (g) grab, (h) hit hard or hit with fist or beat up, (i) push or throw down, (j) give harmful liquids or food (e.g., spicy food, soap, or alcohol), and (k) hit with knuckles. Six parenting behaviours were only included in child maltreatment instruments: (a) burn; (b) choke; (c) force a child to stand or kneel; (d) tie up; (e) twist a body part; and (f) withhold a meal. None of the behaviours identified only in child maltreatment instruments were included in the majority of child maltreatment instruments (range 14−43%).

Similarity in emotional parenting behaviours

The instruments included five emotional behaviours. All emotional behaviours that we identified in our thematic analysis were included in both harsh parenting and child maltreatment instruments: scold or yell or shout or scream, threaten, insult or humiliate, blame or make fun of, and curse or swear. Most child maltreatment instruments asked parents whether they insult, humiliate, or call their child names, followed by threatening a child (see Table 4.3 & 4.4b). Less prevalent were scolding or yelling or shouting or screaming, cursing or swearing, and blaming or making fun of a child. In contrast, most harsh parenting instruments included items on scolding, yelling, shouting, or screaming. Less prevalent behaviours were threatening, insulting, humiliating, calling names, blaming or making fun of the child, and cursing or swearing.

Table 4.4b. Emotional behaviours included in each instrument

		E1	E2	E3	E4	E5
APQ	Harsh parenting	X				
BSI	Harsh parenting					
CCNES	Harsh parenting	X				
CCMS	Child maltreatment		X	X		
CTS-ES	Child maltreatment					
CTSPC	Child maltreatment	X	X	X		X
DHS/MICS	Child maltreatment	X		X		
FM-CA	Child maltreatment		X	X		
GPBS	Harsh parenting					
HDPL	Harsh parenting	X	X	X		
HS	Harsh parenting	X	X			
ICAST-P/-T	Child maltreatment	X	X	X	X	X
IPPS	Harsh parenting					
JVQ	Child maltreatment			X		
PAFAS	Harsh parenting	X		X		
PARQ	Harsh parenting	X	X	X	X	
PBC	Harsh parenting	X			X	
PBI	Harsh parenting		X	X		
PPI	Harsh parenting	X				
PPS	Harsh parenting	X	X		X	
PQ	Harsh parenting	X	X			
PRCM	Harsh parenting	X	X			
PS	Harsh parenting	X		X		X
PSDQ	Harsh parenting	X	X			

Note. E1 = Scold/yell/shout/scream, E2 = Threaten, E3 = Insult/humiliate/call names
E4 = Blame/make fun of, E5 = Curse/swear

Homogeneity in instrument content across and within instrument categories

Homogeneity within child maltreatment instruments

Child maltreatment instruments shared a weak Jaccard Index of 0.35 indicating on average low homogeneity in the included parenting behaviours. Levels of homogeneity between child maltreatment instruments ranged from 8% to 59%, indicating that no child maltreatment instrument included the same behaviours (see appendix 4.2, Figure S4.3a), but instead that for the most part, different physical and emotional behaviours were measured between child maltreatment instruments.

In terms of physical parenting behaviours specifically, the Jaccard Index was similar (0.36) to the overall comparison. This indicates that maltreatment instruments differed strongly in which physical behaviours they included with only a few behaviours shared between instruments. Levels of homogeneity in physical behaviours between child maltreatment instruments ranged from 11% to 67% (see appendix 4.2, Figure S4.3b).

In terms of emotional parenting behaviours specifically, we found a higher Jaccard index of 0.47 across child maltreatment instruments. Child maltreatment instruments were thus more homogenous regarding the emotional parenting behaviours they included compared to the physical behaviours: various instruments were very different in terms of physical behaviours, but shared similar emotional parenting behaviours (e.g., Comprehensive Child Maltreatment Scale [CCMS] & Child Trauma Screen – Exposure Score [CTS-ES]; see appendix 4.2). Homogeneity in emotional behaviours between child maltreatment instruments ranged from 20% to 100% (see appendix 4.2, Figure S4.3c).

Homogeneity within harsh parenting instruments

Harsh parenting instruments shared a weak Jaccard Index of 0.33, indicating on average low homogeneity in the included parenting behaviours. Homogeneity within harsh parenting instruments ranged from 0% to 100% indicating that some instruments could be

used interchangeably, whereas other instruments measured completely different behaviours (see appendix 4.2, Figure S4.4a).

In terms of physical parenting behaviours specifically, the Jaccard Index was higher (0.42), indicating that harsh parenting instruments were moderately homogenous in which physical parenting behaviours they included. Homogeneity in physical behaviours ranged from 0 to 100% (see appendix 4.2, Figure S4.4b).

In terms of emotional parenting behaviours specifically, we found a similarly moderate Jaccard Index of 0.47 across harsh parenting instruments. This indicates that harsh parenting instruments were moderately homogenous in the emotional behaviours they included. Homogeneity in emotional behaviours ranged from 0% to 100% (see appendix 4.2, Figure S4.4c).

Homogeneity between harsh parenting and child maltreatment instruments

We found similar weak levels of homogeneity comparing harsh parenting and child maltreatment instruments (Jaccard Index = 0.20), in terms of all behaviours across all behaviour categories. Some child maltreatment and harsh parenting instruments, however, were more homogeneous (see Table 4.4a–b). For example, the Demographic Health Survey (DHS)/Multiple Indicator Cluster Survey (MICS) Child Discipline Module parental report (child maltreatment) and Parenting and Family Adjustment Scales (PAFAS) (harsh parenting) included 60% of the same physical and emotional parenting behaviours. Some instruments showed higher levels of homogeneity with instruments from the other category than to instruments from their own: the Harsh Discipline Practice List (HDPL), a harsh parenting instrument, shared on average 39% of the same parenting behaviours with child maltreatment instruments (average Jaccard = 0.39) and only 23% with other harsh parenting instruments (average Jaccard = 0.23). However, most harsh parenting and child maltreatment

instruments showed very weak or weak levels of homogeneity (e.g., APQ & CTS-ES = 0%; see appendix 4.2, Figure S4.2a).

For physical behaviours only, we found a very weak Jaccard Index of 0.19 between harsh parenting and child maltreatment instruments, indicating that harsh parenting and child maltreatment instruments are similarly heterogeneous regarding which physical parenting behaviours they include (see appendix 4.2, Figure S4.2b). However, there were some exceptions (e.g., HDPL & Juvenile Victimization Questionnaire [JVQ] Jaccard Index = 0.50).

For emotional behaviours only, the Jaccard Index increased to a weak index of 0.36, indicating higher levels of shared emotional parenting behaviours between harsh parenting and child maltreatment instruments (Figure S4.2c). There were multiple child maltreatment and harsh parenting instruments that showed complete homogeneity (Jaccard Index = 1.00; Parent Behavior Inventory [PBI] and CCMS, PBI and Family Maltreatment – Child Abuse criteria (FM-CA), and DHS/MICS Child discipline and PAFAS), indicating that these instruments included exactly the same emotional parenting behaviours. In fact, several harsh parenting instruments (e.g., HDPL and PBI) showed more homogeneity with child maltreatment instruments than with other harsh parenting instruments.

Discussion

How we measure constructs in violence research impacts our research findings, policy discussions, and prevention approaches. This study compared the parenting behaviours included in parent self-report instruments developed to measure child maltreatment and instruments developed to measure harsh parenting. We found that 73% of parenting behaviours were included in both child maltreatment and harsh parenting instruments, suggesting substantial but not complete similarity. Various behaviours were only included in child maltreatment instruments such as burning and withholding a meal.

Our findings raise the question of whether the parenting behaviours uniquely included in maltreatment instruments are indeed the behaviours that distinguish maltreating families from non-maltreating, harsh parenting families. On the one hand, some of these behaviours, such as burning or choking, might indeed reflect particularly harmful parenting behaviours with severe consequences (Manly, Kim, Rogosch, & Cicchetti, 2001). On the other hand, for many behaviours, it may be difficult to judge how severe they are relative to other behaviours. For example, twisting a body part is unique to child maltreatment instruments and may or may not be more severe than pulling hair, which can also be found in harsh parenting instruments. Because some scholars suggest that harsh parenting is a mild form of child maltreatment (e.g., Berthelon et al., 2020), it is important to know to what extent the behaviours uniquely included in child maltreatment instruments indeed indicate more harmful behaviours. Moreover, apart from severity, studies indicate that the age of the child at the time of the violent events, as well as whether children experience multiple types of abuse, determine the impact of these events on children's developmental outcomes (Hanlon et al., 2020; Manly, Kim, Rogosch, & Cicchetti, 2002).

The behaviours unique to child maltreatment instruments may also indicate less prevalent forms of violence, rather than necessarily less or more severe parenting behaviours. In the absence of a review of the most prevalent harmful parenting behaviours, we turn to examples of individual studies on behaviour frequency and severity. The developers of the ICAST-P identified that moderate physical discipline was nearly five times as prevalent across six countries than severe physical discipline (Runyan et al., 2009). Less than 10% of respondents indicated that they burned or choked their child, forced their child to stand or kneel, gave hot chili pepper to the child, or withheld a meal as a punishment. More frequently reported were spanking (37%), shaking a child (30%), or pinching and slapping (25%), all of which are also included in harsh parenting instruments. Similarly, Ismayilova and Karimli

(2020) found that parents frequently reported spanking, hitting or slapping (68%), shaking (53%), or hitting on the face, head or ears (54%); whereas children reported most frequently experiences of hitting, beating, or spanking with a belt, stick or other object (29%) followed by pulling hair, pinching roughly, and twisting ear (23%), and pushing, kicking, grabbing, shoving, slapping or throwing something at them (14%). All of these most prevalent behaviours can be found in harsh parenting instruments. Very few children reported being choked, burned or parental attempts to drown them (2%). Even though these are just two studies, they suggest that the unique child maltreatment behaviours measure to some extent severe but rare forms of violent parenting behaviours, and that the most prominent behaviours are included in both child maltreatment and harsh parenting instruments. If this were true, then maltreating versus not maltreating families might often be distinguished based on scores on items that are not unique to child maltreatment instruments, but that are also included in harsh parenting instruments.

Homogeneity in the parenting behaviours measured between individual instruments, both across and within categories, was generally low. Although some instruments shared all behaviours (Jaccard Index = 1.0), others measured entirely different parenting behaviours (Jaccard Index = 0.00) This is not uncommon for instruments measuring other constructs (e.g., depression, Fried, 2017; anxiety, Wall & Lee, 2021). Some form of heterogeneity may be needed to capture the harmful parenting behaviours dominantly used in different cultural setting (Bent-Goodley, 2021). However, consensus on the most prevalent harmful parenting behaviours that need to be included in instruments is crucial. Otherwise, the consequence of low levels of homogeneity between instruments is that there may be a risk that the selection of a particular instrument can bias the results. For example, prevalence rates or intervention effectiveness may be underestimated if the prominent harmful behaviours used by the reporting parent are not included in the chosen instrument.

That said, average levels of homogeneity were slightly higher within each category than between. This might indicate that researchers within each field might have more consensus on which key parenting behaviours are harsh parenting and which are child maltreatment. However, there may be other explanations. First, instruments are often based on each other within one instrument category which in turn often leads to including the same or similar items. This seems to be the case, for example, with the DHS/MICS Child Discipline module and the ICAST-P, as they are both based on the CTSPC. Second, instruments within categories might be developed more often for the same purpose. Harsh parenting instruments seem to be used more often in longitudinal studies of parenting styles and intervention trials, whereas child maltreatment instruments are often used to record all potential harmful parenting behaviours to estimate prevalence rates. Third, differing length of instruments, and consequently of included parenting behaviours, between harsh parenting (average 10 items measuring 4 distinct parenting behaviours) and child maltreatment instruments (average 14 items measuring 9 behaviours) may impact the homogeneity index. Comparing a shorter harsh parenting instrument to a longer maltreatment instrument yields less shared behaviour content. Importantly, however, different lengths might also reflect meaningful differences, with harsh parenting instrument developers agreeing more on what the key parenting behaviours are that reflect their construct.

This study has several strengths. To understand how to protect children from harmful parenting and its implications on child development, a clear consensus on the underlying construct, terminology, and instruments that measure those parenting behaviours is crucial. This study contributes to this need by laying the foundation for discussions on the similarity between harsh parenting and child maltreatment in meaning and measurement. For this, we used state-of-the-art mixed methods, including systematic reviews for instrument selection,

qualitative assessment of item content of included instruments, and a quantitative analysis of the overlap and homogeneity of the identified parenting behaviours using the Jaccard Index.

This study also has several limitations. First, although our procedure to identify and include instruments was systematic, it does not include all instruments used in the field. Because of a lack of systematic reviews on harsh parenting instruments, we used a parenting intervention review to identify harsh parenting instruments. As such, we may have missed some harsh parenting instruments that are not used in parenting intervention trials. However, we aimed to account for any important missing harsh parenting instruments that may be prevalent outside of the parenting intervention literature by contacting leading experts from the harsh parenting literature and asking for any missing key instruments for subsequent inclusion. Second, we focused only on physical and emotional parenting behaviours, and not on other forms of child maltreatment (e.g., neglect or sexual abuse). We opted for this approach, because those behaviours are most prevalent and typically associated with harsh parenting and child maltreatment. Also, neglect and sexual abuse are often measured with separate instruments (e.g., Mother Child Neglect Scale and Abusive Sexual Exposure Scale) and clearly defined as maltreatment and therefore do not occur in conceptualisations or measures of harsh parenting. Third, deductive qualitative analysis can lead to a more informed data approach but is also prone to bias (Hsieh & Shannon, 2005). Using a predefined definition of harsh parenting and child maltreatment may have led to finding items that are supportive rather than non-supportive of the definition. We also acknowledge that the 22 identified parenting behaviours could have been categorised differently, such as separating out pushing and throwing down, which could imply different levels of violence severity. However, most items did not specify severity of parenting behaviour. Fourth, the parenting behaviours that are classified as harsh, violent, and potentially harmful may vary by culture (ISPCAN, 2021). We acknowledge that our own cultural biases potentially influenced our

decision to include some behaviours and not others (Tajima, 2021). Importantly, however, we used a definition to classify behaviours as harsh, and observed considerable overlap in parenting behaviours between instruments, indicating that the behaviours included at least reflect consensus across researchers operating in different fields and countries. Fifth, this study focused on the operationalisation of constructs in instruments. We acknowledge the need for a review on the constructs of harsh parenting and child maltreatment, and additional research on the similarity and distinction of the two constructs.

Our findings show that instruments of child maltreatment and harsh parenting substantially share the same parenting behaviours. In fact, any behaviour included in harsh parenting instruments is also included in child maltreatment instruments. That said, child maltreatment instruments did include several unique behaviours, such as twisting a body part and burning. Agreement on the parenting behaviours to include in instruments was only slightly higher within each category than between child maltreatment and harsh parenting instruments. These findings have clear implications for research, policy, and practice. For researchers, there is a substantial risk of missing out a large body of literature when estimating the global knowledge of child maltreatment if findings from highly overlapping instruments are ignored on the basis of being labelled as harsh parenting rather than maltreatment. This could have a severe effect, particularly in research synthesis and may lead to under/or overestimates of prevention efforts, associations, and prevalence. For policy, legislation and policies are often informed by research findings. While there seems to be a strong need for consensus in the research field, policymakers need clear terminology that describes the actual behaviours measured in evidence in order to ensure services and provisions are targeted correctly.

For practice, it is crucial to identify which parenting behaviours may or may not distinguish child maltreatment from harsh parenting, as this may affect how families are perceived by services and which interventions may be offered.

Consequently, there is a clear need for a discussion on whether harsh parenting and child maltreatment should be defined and measured as similar or different constructs. One way to shed light on this is by examining the unique versus shared predictive value of scores based on instruments designed to either measure harsh parenting or child maltreatment. This could perhaps extend current important debates, for example on whether spanking should be classified as child maltreatment and an adverse childhood experience (Afifi et al., 2017; Gershoff et al., 2018). Should the field decide that harsh parenting and child maltreatment are more similar than different, terminology optimally would be limited to one term that clearly describes the construct. One option may be UNICEF's use of "violence against children". If, in contrast, the field decides that harsh parenting and child maltreatment, even though currently measured similarly, are indeed two meaningfully distinct constructs and should be treated as such, researchers need to invest in developing instruments that clearly distinguish between those constructs, and thus between maltreating and non-maltreating harsh parenting families. Finally, there is a strong need for agreement on which behaviours should be included in instruments to minimise the risks attached to the selection of heterogeneous instruments. We showed that there is substantial overlap in harmful parenting behaviours measured in harsh parenting and child maltreatment instruments. For effective prevention and detection of violence against children, we must further develop conceptualisations and operationalisations of harsh parenting versus maltreatment and ensure that instruments are available to either estimate each construct respectively, or one overarching construct, depending on the consensus decision.

References

Afifi, T. O., Ford, D., Gershoff, E. T., Merrick, M., Grogan-Kaylor, A., Ports, K. A., MacMillan, H. L., Holden, G. W., Taylor, C. A., Lee, S. J., & Peters Bennett, R. (2017). Spanking and adult mental health impairment: The case for the designation of spanking as an adverse childhood experience. *Child Abuse & Neglect*, *71*, 24-31. https://doi.org/10.1016/j.chiabu.2017.01.014

Arnold, D. S., O'leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*, *5*(2), 137-144. https://doi.org/10.1037/1040-3590.5.2.137

Azevedo, A. F., Seabra-Santos, M. J., Gaspar, M. F., & Homem, T. (2014). A parent-based intervention programme involving preschoolers with AD/HD behaviours: Are children's and mothers' effects sustained over time? *European Child & Adolescent Psychiatry*, *23*(6), 437-450. https://doi.org/10.1007/s00787-013-0470-2

Bailey, E. L., Van Der Zwan, R., Phelan, T. W., & Brooks, A. (2015). Keeping it going: Evidence of long-term improvements after implementation of the 1-2-3 magic parenting program. *Child & Family Behavior Therapy*, *37*(4), 303-320. https://doi.org/10.1080/07317107.2015.1104776

Bent-Goodley, T. (2021). Diversity in interpersonal violence research. *Journal of Interpersonal Violence, 36*(11-12), 4937-4952. https://doi.org/10.1177%2F08862605211013003

Berthelon, M., Contreras, D., Kruger, D., & Palma, M. I. (2020). Harsh parenting during early childhood and child development. *Economics & Human Biology*, *36*, 100831. https://doi.org/10.1016/j.ehb.2019.100831

Blower, S. L., Gridley, N., Dunn, A., Bywater, T., Hindson, Z., & Bryant, M. (2019). Psychometric properties of parent outcome measures used in RCTs of antenatal and

early years parent programs: a systematic review. *Clinical Child and Family Psychology Review*, *22*(3), 367-387. https://doi.org/10.1007/s10567-019-00276-2

Bradley, S. J., Jadaa, D.-A., Brody, J., Landy, S., Tallett, S. E., Watson, W., Shea, B., & Stephens, D. (2003). Brief psychoeducational parenting program: An evaluation and 1-year follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(10), 1171-1178. https://doi.org/10.1097/00004583-200310000-00007

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brenner, V., & Fox, R. A. (1998). Parental discipline and behavior problems in young children. *The Journal of Genetic Psychology*, *159*(2), 251-256. https://doi.org/10.1080/00221329809596149

Chen, M., & Chan, K. L. (2016). Effects of parenting programs on child maltreatment prevention: A meta-analysis. *Trauma, Violence, & Abuse*, *17*(1), 88-104. https://doi.org/10.1177/1524838014566718

ChildONEurope. (2009). *Guidelines on data collection and monitoring systems on child abuse.* http://www.childoneurope.org/issues/publications/childabuse_guidelines.pdf

Choi, J. K., & Becher, E. H. (2019). Supportive coparenting, parenting stress, harsh parenting, and child behavior problems in nonmarital families. *Family Process*, *58*(2), 404-417. https://doi.org/10.1111/famp.12373

Chrobak, A. A., Siwek, M., Dudek, D., & Rybakowski, J. K. (2018). Content overlap analysis of 64 (hypo) mania symptoms among seven common rating scales. *International Journal of Methods in Psychiatric Research*, *27*(3), e1737. https://doi.org/10.1002/mpr.1737

Cortes Hidalgo, A. P., Thijssen, S., Delaney, S. W., Vernooij, M. W., Jansen, P. W., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., White, T., & Tiemeier, H.

(2021). Harsh parenting and child brain morphology: A population-based study. *Child Maltreatment*. Advance online publication. https://doi.org/10.1177/1077559520986856

Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine*, *13*(3), 595-605. https://doi.org/10.1017/S0033291700048017

Devries, K., Knight, L., Petzold, M., Merrill, K. G., Maxwell, L., Williams, A., Cappa, C., Chan, K. L., Garcia-Moreno, C., Hollis, N., Kress, H., Peterman, A., Walsh, S. D., Kishor, S., Guedes, A., Bott, S., Butron Riveros, B. C., Watts, C., & Abrahams, N. (2018). Who perpetrates violence against children? A systematic analysis of age-specific and sex-specific data. *BMJ Paediatrics Open*, *2*(1), e000180. https://doi.org/10.1136/bmjpo-2017-000180

Eltanamly, H., Leijten, P., Jak, S., & Overbeek, G. (2019). Parenting in times of war: A meta-analysis and qualitative synthesis of war exposure, parenting, and child adjustment. *Trauma, Violence, & Abuse*, *22*(1), 147-160. https://doi.org/10.1177/1524838019833001

Evans, J. D. (1996). *Straightforward statistics for the behavioral sciences*. Thomson Brooks/Cole Publishing.

Evans, S. Z., Simons, L. G., & Simons, R. L. (2012). The effect of corporal punishment and verbal abuse on delinquency: Mediating mechanisms. *Journal of Youth and Adolescence*, *41*(8), 1095-1110. https://doi.org/10.1007/s10964-012-9755-x

Fabes, R., Eisenberg, N., & Bernzweig, J. (1990). *Coping with Negative Emotions Scale (CCNES): Description and scoring.* Arizona State University.

Finkelhor, D., Ormrod, R. K., Turner, H. A., & Hamby, S. L. (2005). Measuring poly-victimization using the Juvenile Victimization Questionnaire. *Child Abuse & Neglect*, *29*(11), 1297-1312. https://doi.org/10.1016/j.chiabu.2005.06.005

Flaherty, R., & Cooper, R. (2010). Piloting a parenting skills program in an Australian rural child protection setting. *Children Australia*, *35*(3), 18-24. https://doi.org/10.1017/S1035077200001139

Fox, R. A. (1994). *Parent Behavior Checklist*. Marquette University.

Frick, P. J. (1991). *The Alabama Parenting Questionnaire*. University of Alabama.

Fried, E. I. (2017). The 52 symptoms of major depression: Lack of content overlap among seven common depression scales. *Journal of Affective Disorders*, *208*, 191-197. https://doi.org/10.1016/j.jad.2016.10.019

Gershoff, E. T., Goodman, G. S., Miller-Perrin, C. L., Holden, G. W., Jackson, Y., & Kazdin, A. E. (2018). The strength of the causal evidence against physical punishment of children and its implications for parents, psychologists, and policymakers. *American Psychologist*, *73*(5), 626-638. https://doi.org/10.1037/amp0000327

Gilbert, R., Widom, C., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The Lancet*, *373*(9657), 68-81. https://doi.org/10.1016/S0140-6736(08)61706-7

Global Partnership to End All Violence Against Children (2021). *Prohibiting all corporal punishment of children: laying the foundations for non-violent childhoods*. https://www.end-violence.org/sites/default/files/paragraphs/download/Prohibiting%20all%20corporal%20punishment%20of%20children%20laying%20the%20foundations%20for%20nonviolent%20childhoods.pdf

Gordon, D. A., Jones, R. H., & Nowicki Jr, S. (1979). A measure of intensity of parental punishment. *Journal of Personality Assessment*, *43*(5), 485-496. https://doi.org/10.1207/s15327752jpa4305_9

Gunderson, E. A., Donnellan, M. B., Robins, R. W., & Trzesniewski, K. H. (2018). The specificity of parenting effects: Differential relations of parent praise and criticism to children's theories of intelligence and learning goals. *Journal of Experimental Child Psychology*, *173*, 116-135. https://doi.org/10.1016/j.jecp.2018.03.015

Hanlon, P., McCallum, M., Jani, B. D., McQueenie, R., Lee, D., & Mair, F. S. (2020). Association between childhood maltreatment and the prevalence and complexity of multimorbidity: A cross-sectional analysis of 157,357 UK Biobank participants. *Journal of Comorbidity, 10,* 1-12. https://doi.org/10.1177/2235042X10944344

Heyman, R. E., Snarr, J. D., Slep, A. M. S., Baucom, K. J., & Linkh, D. J. (2020). Self-reporting DSM–5/ICD-11 clinically significant intimate partner violence and child abuse: Convergent and response process validity. *Journal of Family Psychology*, *34*(1), 101-111. https://doi.org/10.1037/fam0000560

Higgins, D. J., & McCabe, M. P. (2001). The development of the Comprehensive Child Maltreatment Scale. *Journal of Family Studies*, *7*(1), 7-28. https://doi.org/10.5172/jfs.7.1.7

Holden, G. W., Coleman, S. M., & Schmidt, K. L. (1995). Why 3-year-old children get spanked: parent and child determinants as reported by college-educated mothers. *Merrill-Palmer Quarterly*, *41*(4), 431-452. http://www.jstor.org/stable/23087935

Hood, R., Lansley, S., Mitchell, T., & Gaskell-Mew, E. (2021). Using outcome measures in child protection work. *Child & Family Social Work*, *26*(3), 318-328. https://doi.org/10.1111/cfs.12811

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277-1288. https://doi.org/10.1177%2F1049732305276687

Hurley, K. D., Huscroft-D'Angelo, J., Trout, A., Griffith, A., & Epstein, M. (2014). Assessing parenting skills and attitudes: a review of the psychometrics of parenting measures. *Journal of Child and Family Studies*, *23*(5), 812-823. https://doi.org/10.1007/s10826-013-9733-2

Ismayilova, L., & Karimli, L. (2020). Harsh parenting and violence against children: a trial with ultrapoor families in Francophone West Africa. *Journal of Clinical Child & Adolescent Psychology*, *49*(1), 18-35. https://doi.org/10.1080/15374416.2018.1485103

ISPCAN. (2008). *World Perspectives on Child Abuse*. (8th ed.). https://www.ispcan.org/learn/world-perspectives/8th-edition/

ISPCAN. (2021). *World Perspectives on Child Abuse.* (14th ed.). https://www.ispcan.org/product/world-perspectives-on-child-abuse-14th-edition/?v=402f03a963ba

Jimenez Flores, J., & Flores Herrera, L. M. (2014). Diseño y validacíon psicométrica de la Lista de Prácticas de Disciplina Severa [Design and psychometric validation of the Harsh Discipline Practice List]. *Revista Iberoamericana de Diagnostico y Evaluación - e Avaliação Psicológica*, *2*(38), 137-153. https://www.aidep.org/sites/default/files/articles/R38/Art7.pdf

Karjalainen, P., Kiviruusu, O., Aronen, E. T., & Santalahti, P. (2019). Group-based parenting program to improve parenting and children's behavioral problems in families using special services: A randomized controlled trial in a real-life setting. *Children and Youth Services Review*, *96*, 420-429. https://doi.org/10.1016/j.childyouth.2018.12.004

Kelly, R. J., Erath, S. A., Martin-Piñón, O., & El-Sheikh, M. (2021). Longitudinal relations between parents' sleep problems and harsh parenting. *Journal of Family Psychology*, 35(8), 1181-1191. https://doi.org/10.1037/fam0000851

Lang, J. M., & Connell, C. M. (2017). Development and validation of a brief trauma screening measure for children: The Child Trauma Screen. *Psychological Trauma: Theory, Research, Practice, and Policy*, *9*(3), 390-398. https://doi.org/10.1037/tra0000235

Lovejoy, M. C., Weis, R., O'Hare, E., & Rubin, E. C. (1999). Development and initial validation of the Parent Behavior Inventory. *Psychological Assessment*, *11*(4), 534-545. https://doi.org/10.1037/1040-3590.11.4.534

Manly, J. T., Kim, J. E., Rogosch, F. A., & Cicchetti, D. (2001). Dimensions of child maltreatment and children's adjustment: Contributions of developmental timing and subtype. *Development and Psychopathology, 13*(4), 759-782. https://doi.org/10.1017/S0954579401004023

Mathews, B., Pacella, R., Dunne, M. P., Simunovic, M., & Marston, C. (2020). Improving measurement of child abuse and neglect: A systematic review and analysis of national prevalence studies. *PLoS One*, *15*(1), e0227884. https://doi.org/10.1371/journal.pone.0227884

McCabe, K. M., & Clark, R. (1999). Family protective factors among urban African American youth. *Journal of Clinical Child Psychology*, *28*(2), 137-150. https://doi.org/10.1207/s15374424jccp2802_2

Meinck, F., Boyes, M. E., Cluver, L., Ward, C. L., Schmidt, P., DeStone, S., & Dunne, M. P. (2018). Adaptation and psychometric properties of the ISPCAN Child Abuse Screening Tool for use in trials (ICAST-Trial) among South African adolescents and

their primary caregivers. *Child Abuse & Neglect*, *82*, 45-58. https://doi.org/10.1016/j.chiabu.2018.05.022

Miller-Heyl, J., MacPhee, D., & Fritz, J. J. (1998). Dare to be you: A family-support, early prevention program. *Journal of Primary Prevention*, *18*(3), 257-285. https://doi.org/10.1023/A:1024602927381

Milner, J. S. (2004). *The Child Abuse Potential (CAP) inventory*. John Wiley & Sons, Inc.

Morawska, A., & Sanders, M. (2009). An evaluation of a behavioural parenting intervention for parents of gifted children. *Behaviour Research and Therapy*, *47*(6), 463-470. https://doi.org/10.1016/j.brat.2009.02.008

Oshri, A., Duprey, E. B., Liu, S., & Ehrlich, K. B. (2020). Harsh parenting and youth systemic inflammation: Modulation by the autonomic nervous system. *Health Psychology*, *39*(6), 482-496. https://doi.org/10.1037/hea0000852

Park, J. L., & Johnston, C. (2020). The relations among stress, executive functions, and harsh parenting in mothers. *Journal of Abnormal Child Psychology*, *48*(5), 619-632. https://doi.org/10.1007/s10802-020-00622-x

Pinquart, M. (2017). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. *Developmental Psychology*, *53*(5), 873-932. https://doi.org/10.1037/dev0000295

Reid, M., & Snyder, C. (2021). Feasibility of using child maltreatment measurement instruments in the primary care setting: A systematic review. *Journal of Pediatric Nursing, 61*, e1-e14. https://doi.org/10.1016/j.pedn.2021.04.002

Robinson, C. C., Mandleco, B., Olsen, S. F., & Hart, C. (1995). Authoritative, authoritarian, and permissive parenting practices: Development of a new measure. *Psychological Reports, 77*, 819-830. https://doi.org/10.2466/pr0.1995.77.3.819

Rodriguez, V. J., La Barrie, D. L., Zegarac, M. C., & Shaffer, A. (2021). A systematic review of parenting scales measurement invariance/equivalence by race and ethnicity: Recommendations for inclusive parenting research. *Assessment*. Advance online publication. https://doi.org/10.1177/10731911211038630

Rohner, R. P., Khaleque, A., & Cournoyer, D. E. (2005). Parental acceptance-rejection: Theory, methods, cross-cultural evidence, and implications. *Ethos*, *33*(3), 299-334. https://doi.org/10.1525/eth.2005.33.3.299

Rueger, S. Y., Katz, R. L., Risser, H. J., & Lovejoy, M. C. (2011). Relations between parental affect and parenting behaviors: A meta-analytic review. *Parenting: Science and Practice*, *11*(1), 1-33. https://doi.org/10.1080/15295192.2011.539503

Runyan, D. K., Dunne, M. P., Zolotor, A. J., Madrid, B., Jain, D., Gerbaka, B., Mbassa Menick, D., Andreva-Miller, I., Kasim, M. S., Choo, W. Y., Isaeva, O., Macfarlane, B., Ramirez, C., Volkova, E., & Youssef, R. M. (2009). The development and piloting of the ISPCAN Child Abuse Screening Tool-Parent version (ICAST-P). *Child Abuse & Neglect*, *33*(11), 826-832. https://doi.org/10.1016/j.chiabu.2009.09.006

Sanders, M. R., Morawska, A., Haslam, D. M., Filus, A., & Fletcher, R. (2014). Parenting and Family Adjustment Scales (PAFAS): Validation of a brief parent-report measure for use in assessment of parenting skills and family relationships. *Child Psychiatry & Human Development*, *45*(3), 255-272. https://doi.org/10.1007/s10578-013-0397-3

Straus, M. A., & Fauchier, A., (2007). *Manual for the Dimensions of Discipline Inventory (DDI).* University of New Hampshire.

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect*, *22*(4), 249-270. https://doi.org/10.1016/S0145-2134(97)00174-9

Strayhorn, J. M., & Weidman, C. S. (1988). A parent practices scale and its relation to parent and child mental health. *Journal of the American Academy of Child & Adolescent Psychiatry*, *27*(5), 613-618. https://doi.org/10.1097/00004583-198809000-00016

Tajima, E. A. (2021). First, do no harm: From diversity and inclusion to equity and anti-racism in interpersonal violence research and scholarship. *Journal of Interpersonal Violence, 36*(11-12), 4953-4987. https://doi.org/10.1177%2F08862605211012999

UNICEF (2010). *Child discipline practices at home: Evidence from a range of low- and middle-income countries*. https://data.unicef.org/resources/child-disciplinary-practices-at-home-evidence-from-a-range-of-low-and-middle-income-countries/

UNICEF. (2014a). Children in danger: Act to end violence against children. https://www.unicef.org.uk/publications/violence-report/

UNICEF. (2014b). Hidden in plain sight: A statistical analysis of violence against children. https://www.unicef.org/documents/hidden-plain-sight-statistical-analysis-violence-against-children

Van Leeuwen, K. G., & Vermulst, A. A. (2004). Some psychometric properties of the Ghent Parental Behavior Scale. *European Journal of Psychological Assessment*, *20*(4), 283-298. https://doi.org/10.1027/1015-5759.20.4.283

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & health sciences*, *15*(3), 398-405. https://doi.org/10.1111/nhs.12048

Visontay, R., Sunderland, M., Grisham, J., & Slade, T. (2019). Content overlap between youth OCD scales: Heterogeneity among symptoms probed and implications. *Journal of Obsessive-Compulsive and Related Disorders*, *21*, 6-12. https://doi.org/10.1016/j.jocrd.2018.10.005

Wall, A. D., & Lee, E. B. (2021). *What do anxiety scales really measure? An item content analysis of self-report measures of anxiety*. PsyArXiv. https://psyarxiv.com/t7gpx/

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: strengthening parenting competencies. *Journal of Consulting and Clinical Psychology*, *66*(5), 715-730. https://doi.org/10.1037/0022-006X.66.5.715WHO (1999). *Report of the consultation on child abuse prevention.* https://apps.who.int/iris/handle/10665/65900

WHO (2016). *INSPIRE: Seven strategies for ending violence against children*. https://www.who.int/publications-detail-redirect/inspire-seven-strategies-for-ending-violence-against-children

Yoon, S., Speyer, R., Cordier, R., Aunio, P., & Hakkarainen, A. (2020). A systematic review evaluating psychometric properties of parent or caregiver report instruments on child maltreatment: Part 1: Content validity. *Trauma, Violence, & Abuse*, *22*(5), 1013-1031. https://doi.org/10.1177/1524838019898456

5 Effects over time of parenting interventions to reduce physical and emotional violence against children: a systematic review and meta-analysis

This is the second paper of this DPhil thesis which aimed to examine the effects over time of parenting interventions to reduce physical and emotional violence against children perpetrated by parents. This paper conducted a systematic review of randomised controlled trials of social learning theory-based parenting interventions, and applied robust variance estimation aggregate-level meta-analysis to examine the effects across different time points.

This paper has been published in ***eClinicalMedicine The Lancet Discovery Series*** (doi: 10.1016/j.eclinm.2023.102003)

Sophia Backhaus[1]

Patty Leijten[2]

Janina Jochim[1]

G.J. Melendez-Torres[3]

Frances Gardner[1]

[1]Center for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford, United Kingdom

[2]Research Institute Child Development and Education, University of Amsterdam, the Netherlands

[3]Medical School, University of Exeter, United Kingdom

Statement of Authorship

I confirm that I completed the majority of work in this study. I coordinated all review articles, conducted the searches, screened studies, extracted data, ran the analyses, and wrote the paper. Patty Leijten, Frances Gardner, and I were responsible for the conception, design, interpretation of results and overall oversight of the review. Frances Gardner led a previous version of this review. Patty Leijten contributed to the writing of the paper. Janina Jochim collaborated on study screening, data extraction, and quality appraisal. G.J. Melendez-Torres supported me in conducting the statistical analyses.

Abstract

Background: Violence against children affects over one billion children globally. International organisations promote parenting interventions as a main strategy to reduce violence against children. Parenting interventions have therefore been implemented rapidly across the globe. Yet, evidence for their longer-term effects remains unclear. We integrated global evidence to estimate effects over time of parenting interventions to reduce physical and emotional violence against children.

Methods*:* In this systematic review and meta-analysis, we searched 26 databases and trial registries (14 non-English: Spanish, Chinese, Farsi, Russian, Thai) and conducted an extensive grey literature search up to August 01, 2022. We included randomised controlled trials (RCTs) of parenting interventions based on social learning theory for parents of children aged 2–10 years, without time or context restrictions. We critically appraised studies using Cochrane's Risk of Bias Tool. Data were synthesised using robust variance estimation meta-analyses. This study is registered with PROSPERO, CRD42019141844.

Findings: We screened 44,411 records and included 346 RCTs. Sixty RCTs reported outcomes on physical or emotional violence. Trials were distributed across 22 countries (22% LMICs). Risk of bias was high for various domains. Outcome data ranged from 0

weeks to 2 years after the intervention, and was largely based on parent self-report. Parenting interventions reduced physical and emotional violent parenting behaviours immediately after the intervention (n = 42, k = 59; d = −0·46; 95% CI: −0·59, −0·33), at 1–6 months follow-up; (n = 18, k = 31; d = −0·24; 95% CI: −0·37, −0·11) and at 7–24 months follow-up; (n = 12, k = 19; d = −0·18; 95% CI: −0·34, −0·02), but effects were smaller over time.

Interpretation: Our findings suggest that parenting interventions can reduce physical and emotional violence against children. Effects are maintained up to 24 months follow-up, but with diminished effect sizes. With global policy interest and imminent importance, research beyond 2 years and how effects can be better sustained over time is urgently needed.

Panel: Research in context

Evidence before the study

Previous systematic reviews examining the effects of parenting interventions on child maltreatment found small significant effects. However, only two reviews conducted preliminary analyses on whether effects sustain over time and did not provide average effects at varying length of follow-up. Therefore, we systematically searched 26 databases and trial registries in English, Spanish, Chinese, Farsi, Russian and Thai with no language restrictions from inception to August 01, 2022, using search terms “intervention”, “parenting”, and “child behaviour” or “violence”, and synonyms, for RCTs of parenting interventions based on social learning theory for parents of children aged 2–10 years.

Added value of the study

To our knowledge, this is the first systematic review that aimed to meta-analyse the effects of parenting intervention on physical and emotional violence against children at various

time points after participation. We included all available evidence from randomised trials on physical and emotional parenting behaviours that are known to hurt children, including over fifty years of research from across the globe. From 346 eligible RCTs, 60 provided data on physical and emotional violence after participation in a parenting programme. We found that parenting interventions based on social learning theory are effective in reducing physical and emotional violence at immediate post-test, but effects are smaller at 1–6 months and 7–24 months follow-up. Risk of bias varied strongly between studies.

Implications of all the available evidence

Our findings suggest that effects of parenting programmes on physical and emotional violence decrease over time. With global policy interest and rapid scale-up of parenting interventions, it is crucial to understand how the magnitude of effects can be sustained over time. Due to a lack of studies, long-term effects of parenting intervention to reduce violence remain unclear.

Introduction

Violence against children is a global public health and costly societal problem with devastating consequences to child development and health (UNICEF, 2014). Globally, an estimated one billion children experience violence (Hillis et al., 2016). The COVID-19 pandemic has only exacerbated the situation for children by increasing risk factors for violence such as financial instability (Marmor et al., 2023). Violence against children not only violates the United Nations Convention on the Rights of the Child (UN, 1989) but its prevention is also recognised as a key global goal as featured in the Sustainable Development Goals (UN, 2015). In collaboration with other partners (e.g., UNICEF, Centres for Disease Control and Prevention [CDC]), the World Health Organization (WHO) is promoting the use of evidence-based strategies to end violence against children (WHO, 2016). One key strategy is the support of parents and caregivers, because they are the main perpetrators of physical and emotional violence against children (Gilbert et al., 2012). Parenting interventions are therefore increasingly implemented at scale, with growing policy interest such as the recent publication of WHO Guidelines on parenting interventions to prevent child maltreatment and enhance parent-child relationships (WHO, 2023).

Parenting interventions are behavioural interventions directed at parents or other caregivers of the child that typically focus on parents learning new parenting skills and behaviours to improve the way they relate to their child (WHO, 2023). These interventions aim to strengthen the quality of parent-child relationship and enhance parenting knowledge and competence (see Panel 2). They are predominantly grounded in operant and social learning theory (Bandura, 1977), with the premise that children learn behaviours by modelling their parents and through rewards and punishment, and that violent behaviours are often unwittingly reinforced in coercive interactions (Patterson, 1982). In a coercive

Panel 2: Parenting interventions in a nutshell

Parenting interventions aim to improve parents and primary caregivers' parenting quality by teaching parents new and non-violent behaviours and skills to interact with their children. They typically consist of a structured series of sessions, are manualised, and delivered in group or individual formats in the home, community, health setting, or online. Besides parenting behaviours, interventions may also address parental knowledge about child development, attitudes towards violent parenting such as spanking, parenting beliefs, and parenting self-efficacy.

Components of parenting interventions that have shown effective in reducing violent parenting include, for example:

- ignoring negative child behaviours to elicit attention;
- using logical consequences (e.g., losing privileges);
- praising and rewarding appropriate child behaviours;
- improving parental self-management skills such as emotion-regulation.

These components are based on social learning theory that posits that children learn disruptive behaviours when parents unwittingly reward these behaviours and model aversive, often violent, behaviours.

cycle of parent-child interaction, child non-compliance provokes anger and hostility in the parent which leads to a punitive response. This parental response provokes and negatively reinforces child disruptive behaviours, to which the parent responses with even more harshness. This interaction then spirals to violent interactions between parents and children. Social learning theory-based interventions are expected to break these violent interactions between parent and children by teaching parents effective alternative behaviour management skills such as the reinforcement of positive child behaviours and non-violent disciplining techniques.

Evidence suggests that parenting interventions reduce violent parenting behaviours. Most reviews found small effects (Casillas et al., 2016; Chen & Chan, 2016; Gubbels et al.,

2019; Kennedy et al., 2016; McCoy et al., 2020; van der Put et al., 2018; Vlahovicova et al., 2017), yet, one meta-analysis including only RCTs found no effect after controlling for publication bias (Euser et al., 2015). Existing meta-analyses vary widely in how they define child maltreatment, making it difficult to compare their findings and draw conclusions about intervention effects. While some meta-analyses include proxies of violence against children such as correlates of child abuse or general risk for violence (Chen & Chan, 2016; Gubbels et al., 2019; Kennedy et al., 2016), others include only validated child maltreatment instruments or official reports (Casillas et al., 2016; Euser et al., 2015). In the present study, we include all physical and emotional parenting behaviours known to harm children's well-being and development, regardless of whether the primary studies labelled them as maltreatment or violence against children, or not. Theoretically, this is in line with various United Nations (UN)' frameworks that increasingly included any form of physical and emotionally harmful parenting in their definition of violence against children (Global Partnership to End Violence Against Children, 2016; UNICEF, 2014). Empirically, it is in line with findings that measures of harsh parenting share on average 73% of their parenting behaviours with validated child maltreatment instruments (Backhaus et al., 2022).

Most meta-analyses only studied immediate effects of parenting interventions on violence against children. Studying longer-term effects is not common practice, due to ethical and financial challenges, such as wait-list control groups or limited means to collect follow-up data. But because the main aim of parenting interventions is sustained change in parenting behaviours, the true effect of interest is the effects of parenting interventions over time. With parenting interventions increasingly going to scale, this knowledge becomes urgent. Prior reviews, conducted when the evidence base was smaller, and limited

to searching English language databases, suggest sustained beneficial effects on child maltreatment (Euser et al., 2015; Gubbels et al., 2019).

In the present systematic review and meta-analysis, we examined the effects of parenting interventions based on social learning theory to reduce violence against children over time by examining effects at different follow-up times. We focus on social learning theory-based programmes since these programmes are the most widely implemented and scaled-up parenting programmes.

Methods

Search strategy

We report this systematic review and meta-analysis according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines and used Cochrane guidance for systematic reviews of interventions (Higgins et al., 2022; Page et al., 2021). We searched for trials in three ways. First, we included trials from our systematic review completed in 2014 that used the same inclusion and exclusion criteria (Leijten et al., 2016). Second, we included eligible trials from our recent systematic review that covered studies from low- and middle-income countries and deployed a comprehensive search strategy with an exhaustive grey literature and multi language search in English, Thai, Spanish, Chinese, Farsi, and Russian (CRD42018088697, see appendix 1; search updated in August 2022). Third, we systematically searched for eligible trials in 11 databases between January 01, 2014 and August 01, 2022 (3ie Database of Impact evaluations, ASSIA, Campbell Library, The Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials), EMBASE, ERIC, MEDLINE, National Criminal Justice Reference Service, The International Bibliography of the Social Sciences, PsycINFO, PILOTS), and the following trial registries: ClinicalTrials.gov, Australian New Zealand Clinical Trials Registry, WHO International Clinical Trials Registry Platform,

metaRegister of Controlled Trials (mRCT). We imposed no language restrictions (appendix 5.7). Search terms surrounded three conceptual categories: a. intervention, b. parenting, c. child behavioural and emotional problems or maltreatment/violence. In addition, we hand-searched the reference lists of 29 relevant systematic reviews identified in our search, and contacted authors by e-mail to request study results and unpublished manuscripts identified through trial registries. Two authors (SB, JJ) pilot tested the screening criteria on a random sample of 55 records. The first author (SB) screened 100% of the titles and abstracts and retrieved and screened all relevant full-text articles for eligibility. The third author (JJ) double-screened a random 20% of titles and abstracts, and a random 20% of full-texts. Finally, we checked the articles that met the inclusion criteria for duplicate reporting of the same data.

Inclusion criteria

We included randomised-controlled trials with a no treatment, wait-list, minimal intervention, or care as usual control group. Parenting interventions were considered for inclusion when a minimum of 50% of sessions or content was directed at parents and the programme was guided by a strong social learning theoretical foundation. We did not place any restrictions on how the investigators defined the aim of an intervention since interventions often have multiple aims (e.g., strengthen parenting behaviour and promote child mental health) and the aim stated in an evaluation often depends on the research question published in a specific report. Only studies that included parents of children aged 2–10 years were included. We included peer-reviewed publications, as well as unpublished manuscripts, dissertations, and results published in trial registries. This systematic review is part of a larger set of systematic reviews with a range of effectiveness questions that was in part conducted for the development of the WHO Guidelines on Parenting interventions

to prevent maltreatment and enhance parent-child relationships in children aged 0–17 years (WHO, 2023), and informed the development of recommendation 2.

For this research question, we included only trials that examined physical or emotional violence against children. Physical and emotional violence include physical or verbal punishment or aggression, words or acts that cause harm, potential harm, or threat of harm to a child. For inclusion, 50% of items of an instrument or sub-scale of an instrument needed to include any physical or emotional violent behaviours. Full inclusion criteria can be found in appendix 5.1.

Data analysis

Three authors (SB, JJ, PL) independently extracted data for the included trials using a piloted extraction form. Extracted data included information on the publication, study setting/context; intervention characteristics; and on the study population. We assessed risk of bias of included studies using the Cochrane Risk of Bias Tool for RCTs (Higgins et al., 2011). Certainty in the overall effect estimate was assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach (Guyatt et al., 2011).

We calculated Cohen's d using the post sample size, means and standard deviations for intervention and control group. Where these data were not reported, we used relevant model statistics that were based preferably on intention-to-treat analyses. For model derived statistics or regression coefficients, we extracted information on covariates and adjustments wherever possible. Where trials included multiple arms, we extracted each intervention control comparison with reference to a common comparator. We contacted trial authors to obtain missing data for quantitative analyses. Robust variance estimation (RVE) was used to synthesise effect sizes using the robumeta package in Stata Version 16.0 (Tanner-Smith et al., 2016). RVE meta-analysis allows to include all effect sizes even

when the nature of their dependence is unknown. We used a random effects meta-analysis model and assumed an intercorrelation of 0·8. Heterogeneity (I^2) was calculated using the Q-value and degrees of freedom obtained from the RVE meta-analyses.

We grouped effect sizes by time point of assessment under three overarching time categories: immediate effects (up to 1 month after the intervention), 1–6 months follow-up effects, and 7–24 months follow-up effects. This approach was chosen based on our knowledge of the parenting intervention field and literature with most trials reporting immediate effects, some trials effects up to 6 months, and few trials reporting longer follow-up effects (Coore Desai et al., 2017; Pinquart & Teubert, 2010; Solís-Cordero et al., 2022). The longest follow-up effect of included studies was 24 months (appendix 5.5, Figure S5.5). Outcome measures at various time points were only included if the randomised design was still intact.

We ran RVE meta-analyses to calculate main effects for each time point group. Then, we ran a meta-regression including time of measurement as a moderator using RVE (as a continuous moderator in weeks, and as a dummy variable in time point categories: immediate vs 1–6 months & 7–24 months follow-up). Sensitivity analyses excluded any potential outliers. Publication bias was assessed visually using funnel plots (Figures S5.1–5.3). Due to the dependency of effect sizes, Egger's regression as well as the Trim and Fill method are at high risk for Type I error and not a recommended method when using robust variance estimation (Rodgers & Pustejovsky, 2021).

Pre-registration of review

The protocol of this systematic review was registered on PROSPERO (CRD42019141844).

Role of the funding source

The funders of this study had no role in study design, data collection, data analysis, data interpretation, or writing of the Article. All authors had full access to the data in the study and had final responsibility for the decision to submit for publication.

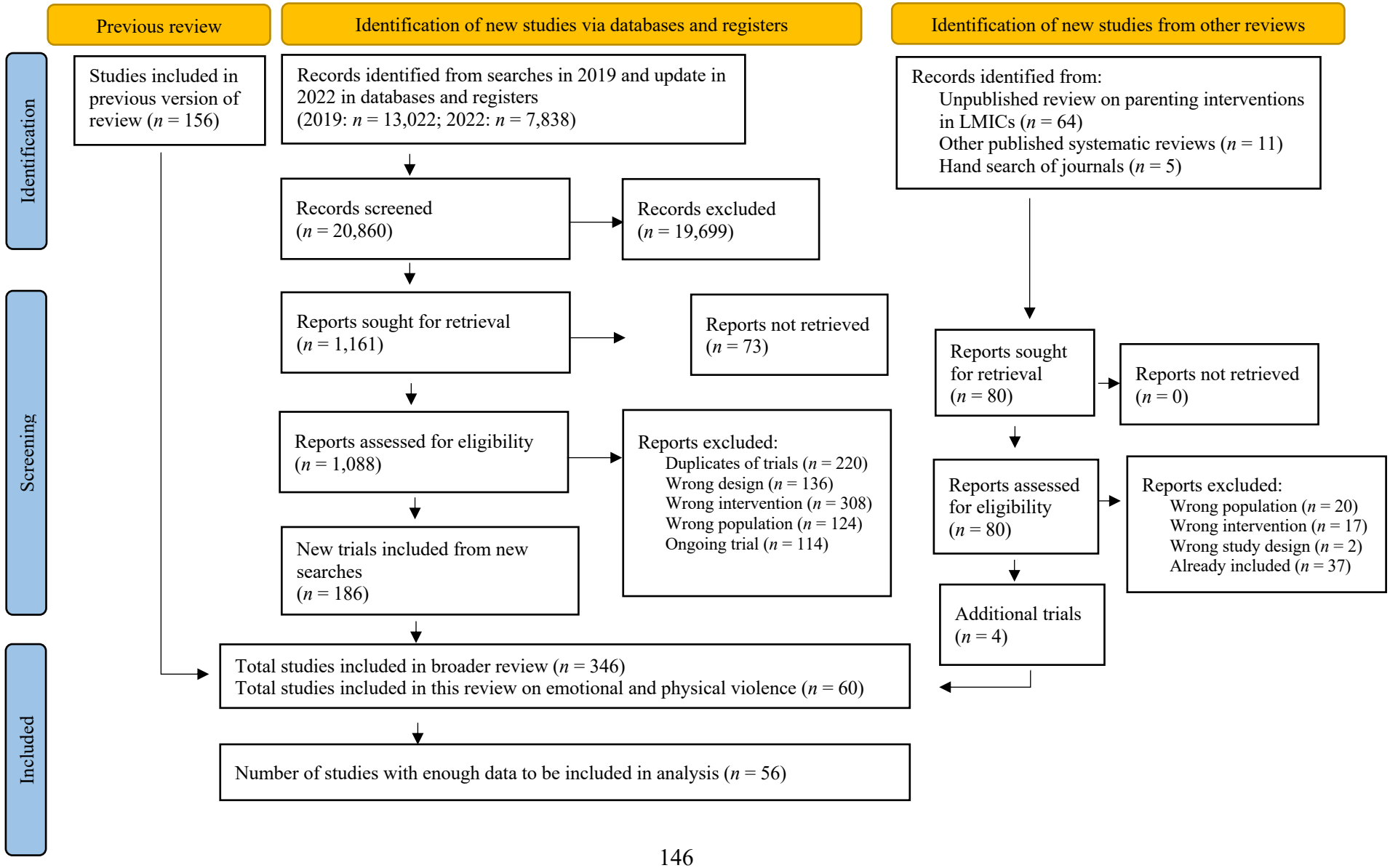
Ethical approval and informed consent

This study received ethical approval from the Department of Social Policy and Intervention at the University of Oxford. Due to the inclusion of only publicly available trial-level summary data, no additional informed consent was needed for this review.

Results

We screened 20,860 abstracts with an interrater agreement of 95% (in 2019: 13,022; update in 2022: 7,838; Figure 5.1). A total of 346 trials were eligible for inclusion in this systematic review, but only 60 trials reported physical or emotional violence outcomes. Tables 5.1 & 5.2 show the characteristics of the 60 included trials. Studies were published between 1984 and 2022; two unpublished manuscripts were included. Interventions were evaluated in 23 countries across various income groups as defined by the World Bank. The majority of trials were implemented in high-income countries (78%, $n = 47$), and most

Figure 5.1. PRISMA Flowchart



interventions were homegrown in the trial country (72%, *n* = 43). The most represented country was the United States of America (47%, *n* = 28). Most interventions targeted families at risk for maltreatment (selective prevention; 50%, *n* = 30), followed by universal prevention (33%, *n* = 20), while only a few included families based on their levels of child maltreatment such as presence of corporal punishment in the family (indicated prevention, 10%, *n* = 6), or previous referral to social protection services based on a history of maltreatment (treatment, 7%, *n* = 4). Sample size ranged from 12 to 796 families. Most programmes were delivered in group format (58%, *n* = 35) and compared to a wait-list control group (48%, *n* = 29), followed by care as usual (28%, *n* = 17), no treatment (15%, *n* = 9), and minimal intervention (8%, *n* = 5). The mean age of included parents at baseline was 33·43 (*SD* = 4·94) and of their children was 4·97 years (*SD* = 1·78). The most used instruments to measure physical and emotional violence were the Conflict Tactics Scale Parent-Child Version, the Hostility scale of the Parenting Scale, and the Corporal Punishment scale of the Alabama Parenting Questionnaire (Table 5.1). Most effect sizes were based on parent self-report (91%, *k* = 97). The mean number of timepoints was 1·34 (*SD* = 0·58), with most trials only including immediate post-test effects (*n* = 33). The longest follow-up measurement included in the meta-analyses was 92 weeks (*n* = 1).

Risk of bias was concerning for blinding of outcome assessors because the majority of data was self-reported by parents which is generally at high risk of bias (Figure 5.2 & appendix 5.4). We observed poor reporting of allocation concealment and blinding of outcome assessors, and low rates of registered protocols (and consequently unclear risk of selective reporting). For random sequence generation, incomplete outcome data, and other bias, the majority of studies received low risk of bias ratings.

Table 5.1. Intervention and design characteristics of included studies (n= 60)

	Year	N	Country	Intervention	Control	Imme-diate effects	1-6 months effects	7-24 months effects	Outcome	% of violence items
Al-Hassan	2011	337	Jordan	Better Parenting Programme	No treatment	0 weeks	–	–	Beating the child (*Unknown Questionnaire*)	100%
Arruabarrena	2022	146	Spain	Incredible Years	Care as usual	–	26 weeks	52 weeks	Physical Punishment (Parenting Practice Inventory)	100%
Bailey	2015	12	Australia	1-2-3 Magic Parenting Program	Wait-list	0 weeks	–	–	Hostility (Parenting Scale)	100%
Bradley	2003	198	Canada	1-2-3 Magic Parenting Program	Wait-list	–	5 weeks	–	Hostility (Brief Symptom Inventory)	100%
Braet	2009	64	Belgium	Parent Management Training	Wait-list	0 weeks	–	–	Harsh punishment (Ghent Parental Behavior Scale)	100%
Breitenstein	2012	24	USA	Chicago Parent Program	Wait-list	0 weeks	24 weeks	48 weeks	Corporal punishment (Parenting Questionnaire)	100%
Breitenstein	2016	79	USA	Chicago Parent Program	Minimal intervention	0 weeks	12 weeks	–	Corporal punishment (Parenting Questionnaire)	100%
Breitenstein	2021	287	USA	Chicago Parent Program	Care as usual	–	12 & 26 weeks	52 weeks	Corporal punishment (Parenting Questionnaire)	100%
Chacko	2018	126	USA	Fathers Supporting Success in Preschoolers	Wait-list	0 weeks		–	Corporal and verbal punishment (Parent Behavior Checklist)	70%
Cheng	2004	281	USA	DARE To Be You	No treatment	0 weeks	–	52 weeks	Harsh/corporal punishment (Harsh Punishment Scale)	likely >50%
Day	2018	183	Australia	Online Triple P	Wait-list	0 weeks	20 weeks	–	Hostility (Parenting Scale)	100%
DeGarmo	2019	426	USA	Fathering through Change	Wait-list	–	12 weeks	–	Harsh discipline (Parenting Practice Inventory)	100%
Foskolos	2014	124	Greece	Triple P	Minimal intervention	0 weeks	26 weeks	–	Hostility (Parenting Scale)	100%
Francis	2021	223	Jamaica	Irie Homes Toolbox	Wait-list	–	12 weeks	–	Psychological aggression (Conflict Tactics Scale)	100%

									Corporal punishment (Conflict Tactics Scale)	
Fung	2014	137	USA	Early Pathways	Wait-list	0 weeks	–	–	Verbal and corporal punishment (Parent Behavior Checklist)	70%
Furlong	Un-published	41	Ireland	ChARM	Wait-list	–	–	52 weeks	Abuse (total sibling, psychological target child)	100%
Gardner	Un-published	120	Thailand	Parenting for Lifelong Health	Care as usual	–	12 weeks	–	Physical abuse (ISPCAN Screening Tool for use in Trials), Emotional abuse (ISCPAN Screening Tool for use in Trials)	100%
Gross	2009	253	USA	Incredible Years	No treatment	0 weeks	–	–	Corporal punishment (Parenting Questionnaire)	100%
Guterman	2013	138	USA	Parent Aide	Care as usual	–	26 weeks	–	Psychological aggression (Conflict Tactics Scale), Physical assault (Conflict Tacticts Scale), Hostility (Brief Symptom Inventory)	100%
Guo	2016	81	China	Triple P	Wait-list	0 weeks	–	–	Corporal punishment (Alabama Parenting Questionnaire)	100%
Harris	2015	199	USA	Early Pathways	Wait-list	0 weeks	–	–	Verbal and corporal punishment (Parent Behavior Checklist)	70%
Herbert	2013	31	USA	Parenting Your Hyperactive Preschooler	Wait-list	0 weeks	–	–	Punitive reactions (Coping with Child Negative Emotions)	100%
Javier	2016	28	USA	The Filipino Family Initiative	Wait-list	0 weeks	–	–	Physical punishment (Parenting Practice Inventory)	100%
Jouriles	2001	36	USA	Project Support	Care as usual	–	–	50 weeks	Maternal aggression towards the child (Conflict Tactics Scale)	100%

Jouriles	2009	66	USA	Project Support	Care as usual	0 weeks	–	–	Physical assault (Conflict Tactics Scale), Psychological aggression (Conflict Tactics Scale)	100%
Knox	2013	149	USA	ACT Raising Safe kids	Care as usual	0 weeks	–	–	Psychological aggression (Conflict Tactics Scale)	100%
Lachman	2017	68	South Africa	Parenting for Lifelong Health	Wait-list	0 weeks	–	–	Harsh parenting: physical assault and psychological aggression (Conflict Tactics Scale)	100%
Lachman	2021	120	Philippines	Parenting for Lifelong Health	Care as usual	4 weeks	–	52 weeks	Physical abuse (ISPCAN Screening Tool for use in Trials), Emotional abuse (ISCPAN Screening Tool for use in Trials)	100% 100%
Leijten	2017	154	Netherlands	Incredible Years	Wait-list	0 weeks	–	–	Physical punishment (Parenting Practice Inventory)	100%
Lessard	2016	96	Canada	Incredible Years	Care as usual	0 weeks	–	–	Physical punishment (Parenting Practice Inventory)	100%
Lester	2014	80	South Africa	Positive Parenting Skills Training Programme	Wait-list	0 weeks	–	–	Hostile parenting (Parent Behavior Inventory)	50%
Leung	2015	111	Hong Kong	Parent-Child Interaction Therapy	Wait-list	0 weeks	–	–	Corporal punishment (Observation)	100%
Leung	2017	64	Hong Kong	Parent-Child Interaction Therapy	Wait-list	0 weeks	–	–	Corporal punishment (Observation)	100%
Menting	2014	133	Netherlands	Incredible Years	No treatment	0 weeks	–	–	Corporal punishment (Alabama Parenting Questionnaire)	100%
Miller-Heyl	1998	796	USA	DARE To Be You	No treatment	–	–	40 & 92 weeks	Harsh punishment (Self-developed)	likely 100%
Nicholson	2002	26	USA	STAR parenting programme	Wait-list	0 weeks	–	–	Harsh discipline (Parent Behavior Checklist)	70%
Nogueira	2021	134	Portugal	Triple P	Care as usual	2 weeks	26 weeks	52 weeks	Hostility (Parenting Scale)	100%

Olivares	1997	60	Spain	*unnamed*	Minimal intervention	4 weeks	–	52 weeks	Punishment non-verbal (Observation)	likely 100%
Oveisi	2010	246	Iran	SOS! Help for parents	Care as usual	–	8 weeks	–	Child abuse (Conflict Tactics Scale)	100%
Peterson	2002	119	USA	*unnamed*	No treatment	0 weeks	–	–	Harsh punishment (Self-developed)	100%
Portwood	2011	271	USA	ACT Raising Safe Kids	Care as usual	0 weeks	12 weeks	–	Harsh discipline (Parent Behavior Checklist)	70%
Prinz *	2009	195,270	USA	Triple P	No treatment	–	–	260 weeks	Official report	100%
Pruett	2019	284	USA	Supporting Father Involvement	Wait-list	–	8 weeks	–	Harsh/corporal punishment (Alabama Parenting Questionnaire)	100%
Rincón	2018	332	Chile	Day by Day Program	Wait-list	–	5 weeks	–	Humiliating treatment (Harsh Discipline Practice List), Physical punishment (Harsh Discipline Practice List)	100%
Selby*	2021	129	UK	Embers the Dragon Intervention	Care as usual	0 weeks	–	–	Hostility (Parenting Scale)	100%
Self-Brown	2018	99	USA	SafeCare	Minimal intervention	1 week	–	–	Corporal punishment (Conflict Tactics Scale), Psychological aggression (Conflict Tactics Scale)	100%
Silovsky*	2011	105	USA	SafeCare	Care as usual	–	–	96 weeks	Official report	100%
Sim	2014	270	Liberia	Parents Make the Difference	Wait-list	4 weeks	–	–	Harsh discipline (MICS Child Discipline Module)	100%
Smith	2010	60	USA	Role of a Father	Wait-list	0 weeks	–	–	Discipline: Harsh, punishing (Parent Behavior Checklist)	70%
Solís-Cámara	2004	40	Mexico	Programa de Crianza Estandarizado	Wait-list	0 weeks	–	–	Negative verbal behaviour (Observation), Negative physical behaviour (Observation), Harsh Discipline (Parent Behavior Checklist)	100%

Solís-Cámara	2015	60	Mexico	Programa de Crianza Estandarizado.	No treatment	0 weeks	–	–	Negative verbal behaviour (Observation), Negative physical behaviour (Observation), Harsh Discipline (Parent Behavior Checklist)	70%
Sourander	2016	464	Finland	Strongest Families Smart Website	Minimal intervention	–	12 weeks	40 & 92 weeks	Hostility (Parenting Scale)	100%
Spaccarelli	1992	37	USA	Incredible Years	Wait-list	0 weeks	–	–	Punitiveness, coercive techniques (Parent Behavior Inventory)	50%
Villodas	2021	55	USA	Parent-Child Interaction Therapy	Care as usual	0 weeks	–	–	Punitive punishment (Alabama Parenting Questionnaire)	100%
Ward	2020	296	South Africa	Parenting for Lifelong Health	Care as usual	0 weeks	–	52 weeks	Physical discipline (ISPCAN Screening Tool for use in Trials), Psychological discipline (ISPCAN Screening Tool for use in Trials)	100%
Webster-Stratton	1984	25	USA	Incredible Years	Wait-list	0 weeks	–	–	Spanking (Parent Daily Report)	100%
Webster-Stratton	1990	50	USA	Incredible Years	Wait-list	4 weeks	–	–	Spanking (Parent Daily Report)	100%
Wolfe	1988	53	Canada	Parent training	Care as usual	0 weeks	12 weeks	–	Physical negative (Observation)	likely 90%
Yao	2022	30	Japan	Behaviour parent training	Wait-list	0 weeks	–	–	Yelling (Parenting Scale) Spanking (Parenting Scale)	100% 100%
Zahra	2014	60	Iran	*unnamed*	Care as usual	0 weeks	–	–	Emotional abuse (Conflict Tactics Scale), Physical aggression (Conflict Tactics Scale)	100%

* not included in meta-analysis

Table 5.2. Participant characteristics of included studies (n= 60)

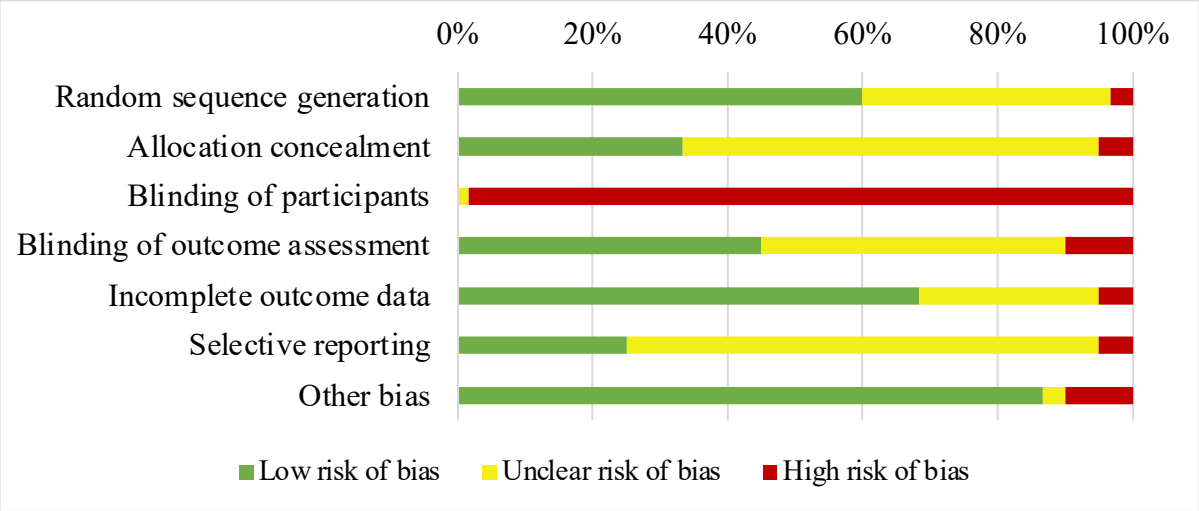
	Year	N	Intervention	Prevention level	Child gender (boys)	Child mean age	Child age range
Al-Hassan*	2011	337	Better Parenting Programme	Universal	–	–	0–8 years
Arruabarrena	2022	146	Incredible Years	Treatment	66%	6.6	4–8 years
Bailey	2015	22	1-2-3 Magic Parenting Program	Universal	75%	8.50	6–12 years
Bradley	2003	198	1-2-3 Magic Parenting Program	Selective	61%	3.75	3–4 years
Braet	2009	64	Parent Management Training	Selective	64%	5.58	4–7 years
Breitenstein	2012	24	Chicago Parent Program	Universal	54%	2.81	2–4 years
Breitenstein	2016	79	Chicago Parent Program	Universal	43%	–	2–5 years
Breitenstein	2021	287	Chicago Parent Program	Universal	–	2.2	2–5 years
Chacko	2018b	126	Fathers Supporting Success in Preschoolers	Selective	68%	4.59	–
Cheng	2004	281	DARE To Be You	Universal	–	–	2–5 years
Day	2018	183	Online Triple P	Selective	47%	3.50	1–8 years
DeGarmo	2019	426	Fathering through Change	Universal	56%	7.88	4–12 years
Foskolos	2014	124	Triple P	Universal	53%	–	2–12 years
Francis	2021	223	Irie Homes Toolbox	Universal	51%	4.04	–
Fung	2014	137	Early Pathways	Selective	73%	3.90	0–6 years
Furlong	Un-published	41	ChARM	Treatment	61%	6.60	–
Gardner	Un-published	120	Parenting for Lifelong Health	Selective	61%	5.22	2–9 years
Gross	2009	253	Incredible Years	Universal	56%	2.91	2–4 years
Guterman	2013	138	Parent Aide	Indicated	50%	–	0–12 years

Guo	2016	81	Triple P	Universal		8.05	–
Harris	2015	199	Early Pathways	Selective	70%	2.88	1–5 years
Herbert	2013	31	Parenting Your Hyperactive Preschooler	Selective	74%	4.50	3–6 years
Javier	2016	28	The Filipino Family Initiative	Selective	45%	8.45	6–12 years
Jouriles	2001	36	Project Support	Selective	50%	5.67	4–9 years
Jouriles	2009	66	Project Support	Selective	72%	–	4–9 years
Knox	2013	149	ACT Raising Safe kids	Selective	59%	3.35	1–8 years
Lachman	2017	68	Parenting for Lifelong Health	Selective	51%	5.40	3–8 years
Lachman	2021	120	Parenting for Lifelong Health	Indicated	47%	3.80	2–6 years
Leijten	2017	154	Incredible Years	Selective	62%	5.59	3–8 years
Lessard	2016	96	Incredible Years	Selective	84%	8.20	6–9 years
Lester	2014	80	Positive Parenting Skills Training Programme	Universal	56%	8.36	5–12 years
Leung	2015	111	Parent-Child Interaction Therapy	Selective	74%	4.50	2–7 years
Leung	2017	64	Parent-Child Interaction Therapy	Selective	83%	5.50	2–7 years
Menting	2014	133	Incredible Years	Selective	49%	6.40	2–10 years
Miller-Heyl	1998	796	DARE To Be You	Selective	–	3.15	2–5 years
Nicholson	2002	26	STAR parenting programme	Indicated	54%	–	1–5 years
Nogueira	2021	134	Triple P	Selective	12%	7.13	3–12 years
Olivares	1997	60	*unnamed*	Universal	–	7.50	7–9 years
Oveisi	2010	246	SOS! Help for parents	Universal	51%	4.53	2–6 years
Peterson	2002	119	*unnamed*	Indicated	62%	3.00	2–4 years
Portwood	2011	271	ACT Raising Safe Kids	Universal	–	–	0–7 years

Prinz*	2009	195270	Triple P	Universal	–	–	0–8 years
Pruett	2019	284	Supporting Father Involvement	Treatment	–	2.90	0–12 years
Rincón	2018	332	Day by Day Program	Universal	53%	3.80	3–5 years
Selby*	2021	129	Embers the Dragon Intervention	Universal	47%	4.96	2–7 years
Self-Brown	2018	99	SafeCare	Selective	65%	3.30	2–5 years
Silovsky*	2011	105	SafeCare	Selective	–	–	?–5 years
Sim	2014	270	Parents Make the Difference	Selective	47%	5.16	3–7 years
Smith	2010	60	Role of a Father	Selective		> 50%: 1–9 years	1–18 years
Solís-Cámara	2004	40	Programa de Crianza Estandarizado	Selective	60%	3.70	3–5 years
Solís-Cámara	2015	60	Programa de Crianza Estandarizado.	Universal	63%	3.68	3–5 years
Sourander	2016	464	Strongest Families Smart Website	Selective	62%	4	4 years
Spaccarelli	1992	37	Incredible Years	Universal	57%	6.20	–
Villodas	2021	55	Parent-Child Interaction Therapy	Selective	62%	4.78	2–7 years
Ward	2020	296	Parenting for Lifelong Health	Selective	53%	–	2–9 years
Webster-Stratton	1984	25	Incredible Years	Indicated	71%	4.80	3–8 years
Webster-Stratton	1990	50	Incredible Years	Selective	79%	5.00	3–8 years
Wolfe	1988	53	Parent training	Indicated	–	2.04	0–5 years
Yao	2022	30	Behaviour parent training	Selective	–	–	6–12 years
Zahra	2014	60	*unnamed*	Treatment	–	5	5 years

* not included in meta-analysis

Figure 5.2. Summary of risk of bias assessment across studies (n=60)



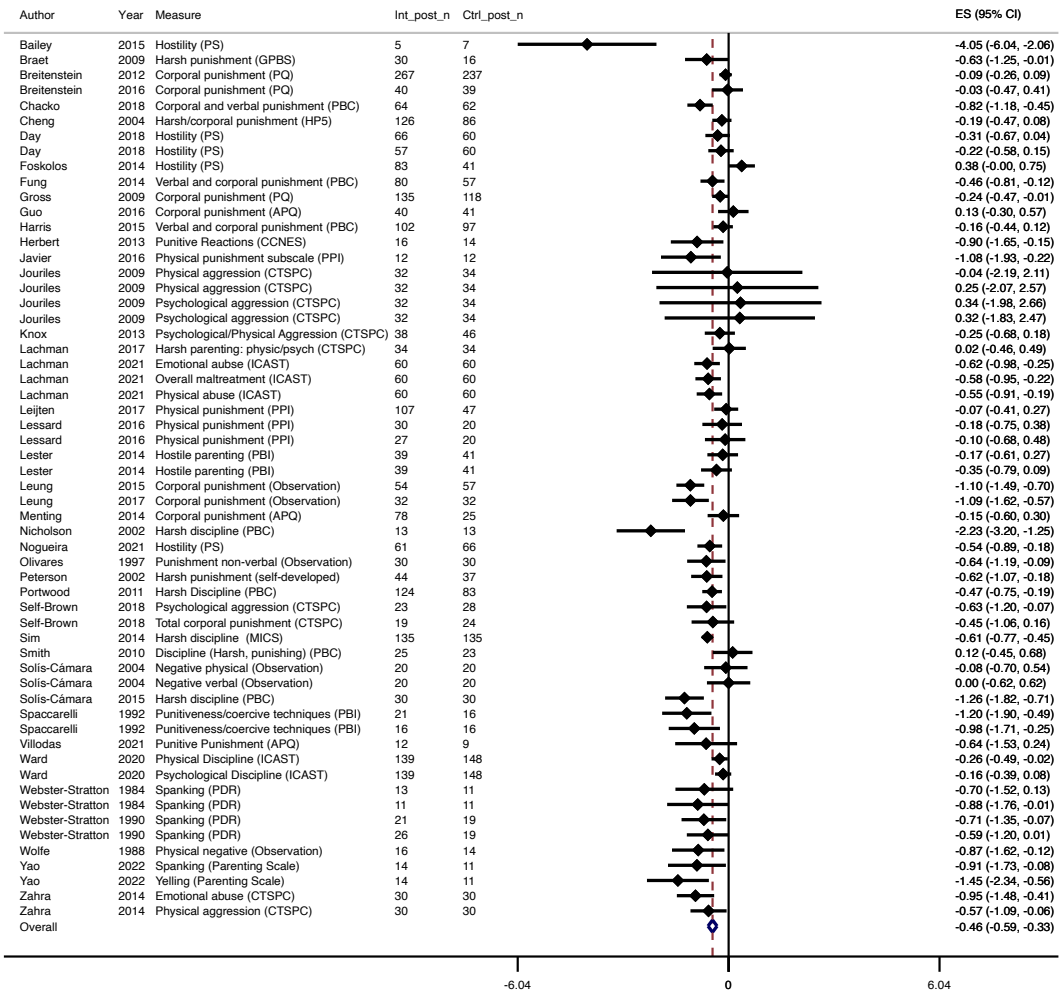
We found an overall small effect of parenting interventions for reducing physical and emotional violence (n = 56, k = 107; d = −0·37; 95% CI [–0·47, –0·27]) in a heterogeneous set of effect sizes (I^2 = 76%). The number of trials with longer follow up was relatively small, and although effects were maintained over time, the effect sizes appeared to lessen over time (Table 5.3): immediately after the intervention (up to 1 month) d = –0·46 (n = 42, k = 58; 95% CI [–0·59, –0·33], I^2 = 76%; moderate certainty; Figure 5.3), 1–6 months follow- up d = –0·24 (n = 18, k =31; 95% CI [–0·37, –0·11], I^2 = 73%; low certainty; Figure 5.4), and 7–24 months follow-up d = –0·18 (n = 12, k = 18; 95% CI [–0·34, –0·02], I^2 = 61%; low certainty; Figure 5.5). Publication bias was suspected for 7–24 months follow-up data, with an overrepresentation of larger trials reporting beneficial longer-term effects (see appendix 5.3, Figures S5.1–3). Main effect results are summarised in Table 5.3. The main effects for each time point suggest that effects decrease over time. Meta-regression results with the number of weeks after the intervention as a continuous moderator revealed a significant moderation effect (ß= 0·005; 95% CI [0·00, 0·00], between immediate (d = –0·46), and 1–6 and 7–24 months follow-up effects (ß = 0·24; 95% CI [0·07, 0·40]).

Table 5.3. Meta-analytic results for all timepoint categories

Time point	No. of trials	No. of effect sizes	Effect size (Cohen's d)	N intervention group	N control group	Confidence interval of effect size	Hetero-geneity (I^2)	GRADE certainty of evidence*	Publication bias
Across all time points	56	107	–0·37***	3992	3478	–0·47, –0·27	76%	⊕⊕⊕◯ moderate	Not detected
Immediate	42	58	–0·46***	2388	2062	–0·59, –0·33	76%	⊕⊕⊕◯ moderate	Not detected
1–6 months	18	31	–0·24*	1901	1703	–0·37, –0·11	73%	⊕⊕◯◯ low	Not detected
7–24 months	12	18	–0·18*	1264	1135	–0·34, –0·02	61%	⊕⊕◯◯ low	Detected

* for detailed GRADE assessment see Appendix 5.2

Figure 5.3. Forest plot for the immediate effect of parenting interventions on physical and emotional violence (0–4 weeks after intervention)



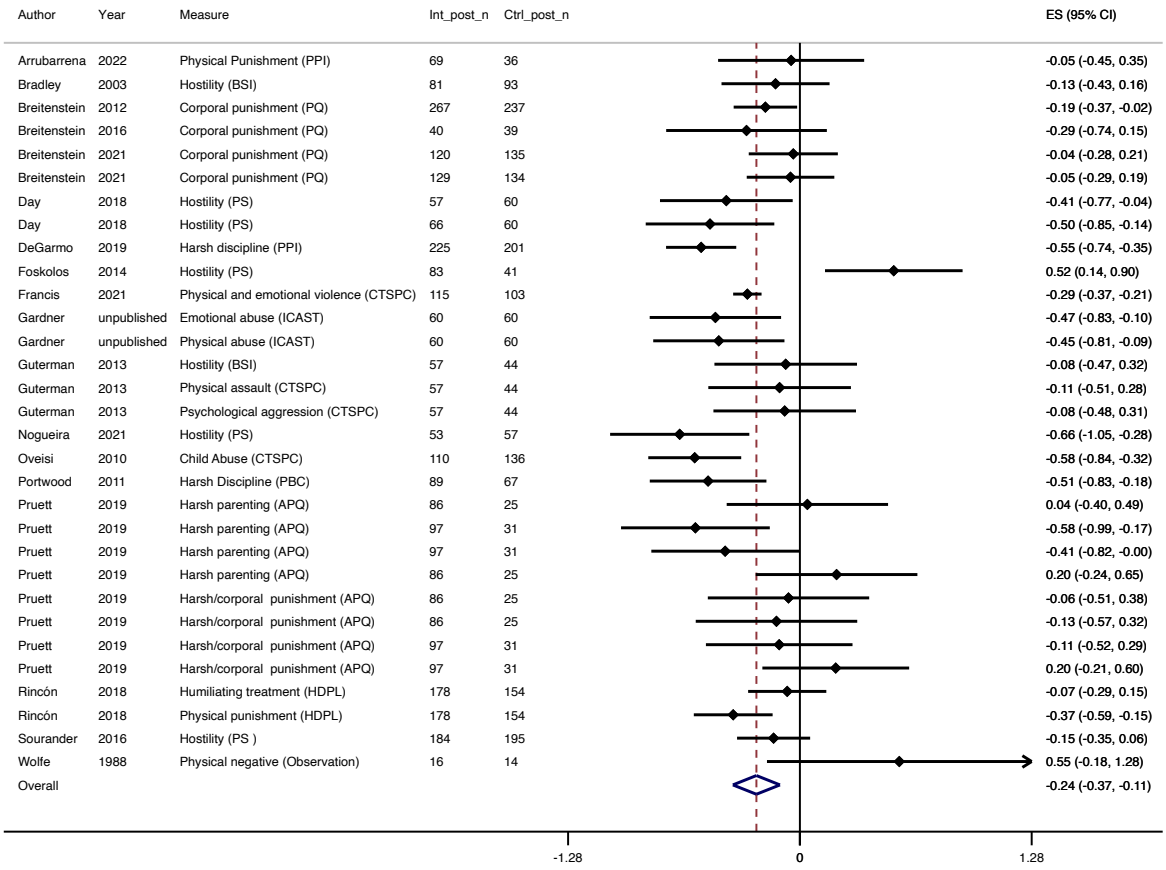
Legend. ES = Effect size, CI = Confidence interval, int_post_n = Sample size for intervention group at post-test, ctrl_post_n = Sample size for control group at post-test

τ^2=0·06), and tested categorically, there was a significant difference in effect estimates

We conducted various post-hoc robustness-checks on our findings. First, we tested whether the decrease in effects over time could be explained by publication bias with trials with lower initial intervention success (smaller Cohen's d at post-test) not publishing follow-up effects. While we were unable to exclude this possibility, we tested whether trials with follow-up effects reported higher magnitude of effect at post-test compared to

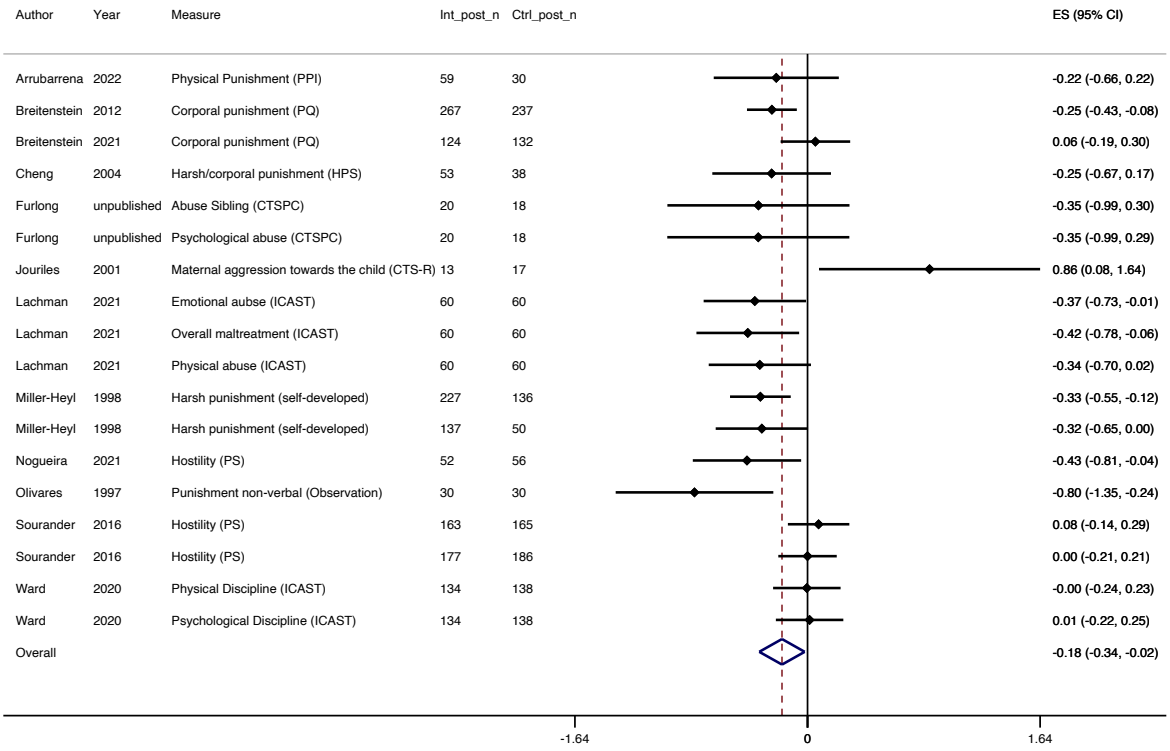
trials without follow-up data using meta-regression analyses on the mean Cohen's d at post-test for both groups of trials. This was not the case (ß = 0·26; 95% CI [–0·01, 0·52], $\tau^2 = 0{\cdot}09$). Second, we tested whether our decision to include effect sizes from both instruments developed to measure harsh parenting and instruments developed to measure child maltreatment instruments impacted the results. For this, we reran our analyses, first, including only validated and explicit child maltreatment instruments, and, second, varying the cut-off for the number of items that measure physical or emotional violence that instruments had to include in order to be included in our meta-analysis (25%, 75%, 100%).

Figure 5.4. Forest plot for the effect at 1–6 months follow-up of parenting interventions on physical and emotional violence



Legend. ES = Effect size, CI = Confidence interval, int_post_n = Sample size for intervention group at post-test, ctrl_post_n = Sample size for control group at post-test

Figure 5.5. Forest plot for the effect at 7–24 months follow-up of parenting interventions on physical and emotional violence



Legend. ES = Effect size, CI = Confidence interval, int_post_n = Sample size for intervention group at post-test, ctrl_post_n = Sample size for control group at post-test

For these sensitivity analyses, we included all time points, since analyses would otherwise fail to produce a reliable estimate due to a small number of trials included. We found a small effect for parenting interventions on physical and emotional violence for maltreatment validated instruments (ICAST & CTSPC) across all time points (n = 12, k = 32; d = –0·24; 95% CI [–0·47, –0·02]; I^2 = 69%). Consequently, the effect holds when using a more conservative inclusion criterion for instruments. We found moderate effects for parenting interventions on physical and emotional violence when using various cut-offs for the number of items measuring physical or emotional violence i.) 25% (n = 204, k = 108; d = –0·38; 95% CI [–0·46, –0·31]; I^2 = 74%), ii.) 75% (n = 45, k = 92; d = –0·32; 95% CI [–0·42, –0·22]; I^2 = 73%), iii.) 100% (n = 44, k = 90; d = –0·32; 95% CI [–0·43, –0·22]; I^2 = 73%). This indicates that the overall main effect is robust and present even with

wider or stricter instrument inclusion criteria (i.e., including only instruments that solely measured physical and emotional violence).

Discussion

With parenting interventions being distributed globally, it is vital to understand whether they effectively and sustainably reduce physical and emotional violence against children. This study found that parenting interventions based on social learning theory effectively reduce physical and emotional violent parenting behaviours. Intervention effects were maintained but smaller over time, even though the evidence base was limited to intervention effects up to 24 months.

The small overall effect of $d = –0·37$ (based on 7,470 families) indicates that Cohen's d of –0·37 would mean that 65% of the intervention group will show less physical and emotional violence than the control group (Cohen's U3), whereas still 35% of participants are expected to show similar scores as the control group (Cohen, 1977). However, keeping in mind that parenting interventions are gradually being scaled up, as a consequence more families would have access to interventions which strongly increases the number of children that can be protected from violence at home. In addition to this, evidence for their effects, including effects over time, is more robust than that of other interventions that aim to reduce violence against children (such as changing norms and life skills trainings) (WHO, 2016).

We found that effects got smaller over time. Coercive cycles suggest that patterns of parent-child interaction become more entrenched over time and thus harder to change. Our findings suggest that change in these manifested parenting patterns through parenting interventions is possible, and that effects from interventions possibly maintain over time, albeit over time parents may partially apply previous parenting patterns. Based on the number of relatively few trials examining effects beyond 1 year post intervention,

conclusions on longer-term effects remain undrawn. Findings from previous meta-analyses on the effects of parenting interventions over time are mixed. While most parenting reviews could not examine effects at follow-up due to a lack of studies examining follow-up effects (Coore Desai et al., 2017; Solís-Cordero et al., 2022; Vlahovicova et al., 2017), exploratory meta-analyses suggest sustained effects on parenting (Euser et al., 2015; Gubbels et al., 2019). Turning towards the broader literature, two reviews examined the effects of parenting intervention for young children (under 3 years of age) over time. While one review with a broader scope in outcomes found fading out effects (Jeong et al., 2021), a review focusing on child abuse and neglect found no effects at follow-up. Our study adds to this body of evidence by suggesting that parenting programme effects maintain but get smaller over time, although the number of studies is too small to draw more firm conclusions.

We were unable to test whether parenting interventions effects maintain or further diminish beyond 2 years post-intervention. That the effect sizes at 1–6 months follow-up (d = –0·24) and 7–24 months follow-up (d = –0·18) seemed similar suggest that effects may decrease in the initial weeks and months after the intervention ends, but effects can still be observed in studies reporting follow-up data. However, analyses within trials that report post-test and follow-up data are urgently needed to fully exclude publication bias, and longer follow-up studies are needed to confirm our findings.

Our findings suggest that a key challenge for the field is to understand how effects can be sustained over time. For example, booster sessions may sustain initial effects, or at least weaken or delay potential fade-out effects. Another option would be interventions that are briefer, but ongoing, such as the Family Check-Up system where families are seen yearly to assess family strengths and challenges and offer tailored additional support based on this assessment (Dishion et al., 2003). However, future studies should consider these

additional costs related to sustaining effects and re-evaluate the cost-effectiveness of parenting interventions to reduce violence against children. We know from other public health behavioural interventions that sustained behaviour change is challenging (e.g., obesity interventions, Perri, 1998; smoking cessation, Volpp et al., 2009). Various theories have been developed to understand threats to long-term behaviour adherence (Bouton, 2014; Middleton et al., 2013; Wood & Neal, 2016). For the parenting intervention field, more research is urgently needed to identify why some parents struggle to maintain their new parenting skills. Possible explanations could be related to change in parents' motivation, capability, or opportunities over time (COM-B model; Michie et al., 2011), changes in the context of the behaviour such as children moving into new developmental stages with new challenging behaviours (Bouton, 2014), or possible friction in the environment by only one parent applying the new behaviour (Wood & Neal, 2016).

Several limitations of our review merit attention. First, our outcomes included both parent self-report and direct observational data, but most effect sizes (91%, $n = 97$) were based on self-report of parents. Albeit self-report of maltreatment yields a more reliable estimate than official reports, self-report data is at risk for social desirability bias, particularly given that blinding of participants was not possible in the included trials (Stoltenborgh et al., 2015). Results of any evaluation of interventions to reduce child maltreatment should be seen in the light of the restrictions of our measures to validly assess maltreatment. Second, we included only interventions based on social learning theory. This allowed us to reduce heterogeneity between trials and included the commonest and most established parenting interventions (e.g., Triple P, Incredible Years, Parenting for Lifelong Health, Parent-Child Interaction Therapy, and Parent Management Training – Oregon model), but limited the generalisability of our findings to this specific type of interventions. While multiple evaluation studies of the same intervention brand

were often included in the same meta-analysis, no specific intervention dominated any of the meta-analyses. Third, we observed high heterogeneity in effect sizes despite relative homogeneity in intervention type and age group. This heterogeneity may reflect differential effects based on the study population, intervention setting, delivery agents, etc. Since moderation analyses in meta-analyses are generally underpowered (Lipsey, 2003), individual participant data meta-analysis that can study differential intervention effects at the individual family level is needed to unpack which factors impact intervention effects on physical and emotional violence. Fourth, only a few trials provided immediate post-test and follow-up data. Thus, we were unable to compare effects over time within trials. Fifth, this review could not estimate the effects of parenting interventions for physical and emotional violence separately since most studies used measurements that merge physical and emotional violence. Future trials should separate out physical and emotional violence.

Despite these limitations, our study answers to a timely call by international organisations to examine effects over time of parenting interventions to reduce violence against children. Methodological rigor in terms of systematic literature search (published and unpublished work in multiple languages), inclusion (i.e., only randomised controlled trials; measures of violence regardless of whether they are labelled as such; interventions with the same theory and similar components), and analyses (robust variance estimation including all eligible effect sizes and sensitivity analyses ruling out alternative explanations) enhance the credibility of our findings.

In conclusion, parenting interventions based on social learning theory can successfully reduce physical and emotional violence perpetrated by parents and caregivers, even though effects are reduced at follow-up. With global policy interest and scale up of interventions, research is urgently needed to identify how effects can be better sustained over time.

References

* = studies included in review

* Al-Hassan, S. M., & Lansford, J. E. (2011). Evaluation of the Better Parenting Programme in Jordan. *Early child development & care*, *181*(5), 587-598. https://doi.org/10.1080/03004431003654925

* Arruabarrena, I., Rivas, G. R., Cañas, M., & De Paúl, J. (2022). The incredible years parenting and child treatment programs: a randomized controlled trial in a child welfare setting in Spain. *Psychosocial Intervention*, *31*(1), 43-58. https://doi.org/10.7440/res64.2018.03

Backhaus, S., Leijten, P., Meinck, F., & Gardner, F. (2022). Different instruments, same content? A systematic comparison of child maltreatment and harsh parenting instruments. *Trauma, Violence, & Abuse*, 15248380221134290. https://doi.org/10.1177/15248380221134290

* Bailey, E. L., Van Der Zwan, R., Phelan, T. W., & Brooks, A. (2015). Keeping it going: evidence of long-term improvements after implementation of the 1-2-3 magic parenting program. *Child & Family Behavior Therapy*, *37*(4), 303-320. https://doi.org/10.1080/07317107.2015.1104776

Bandura, A. (1977). *Social learning theory* (Vol. 1). Prentice-hall.

Bouton, M. E. (2014). Why behavior change is difficult to sustain. *Preventive Medicine*, *68*, 29-36. https://doi.org/10.1016/j.ypmed.2014.06.010

* Bradley, S. J., Jadaa, D.-A., Brody, J., Landy, S., Tallett, S. E., Watson, W., . . . Stephens, D. (2003). Brief psychoeducational parenting program: An evaluation and 1-year follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(10), 1171-1178. https://doi.org/10.1097/00004583-200310000-00007

* Braet, C., Meerschaert, T., Merlevede, E., Bosmans, G., Van Leeuwen, K., & De Mey, W. (2009). Prevention of antisocial behaviour: Evaluation of an early intervention programme. *European Journal of Developmental Psychology*, *6*(2), 223-240. https://doi.org/10.1080/17405620601033194

* Breitenstein, S. M., Fehrenbacher, C., Holod, A. F., & Schoeny, M. E. (2021). A randomized trial of digitally delivered, self-administered parent training in primary care: effects on parenting and child behavior. *The Journal of Pediatrics*, *231*, 207-214. https://doi.org/10.1016/j.jpeds.2020.12.016

* Breitenstein, S. M., Fogg, L., Ocampo, E. V., Acosta, D. I., & Gross, D. (2016). Parent Use and Efficacy of a Self-Administered, Tablet-Based Parent Training Intervention: A Randomized Controlled Trial. *JMIR mHealth uHealth*, *4*(2), e36. https://doi.org/10.2196/mhealth.5202

* Breitenstein, S. M., Gross, D., Fogg, L., Ridge, A., Garvey, C., Julion, W., & Tucker, S. (2012). The Chicago Parent Program: Comparing 1-year outcomes for African American and Latino parents of young children. *Research in Nursing & Health*, *35*(5), 475-489. https://doi.org/10.1002/nur.21489

Casillas, K. L., Fauchier, A., Derkash, B. T., & Garrido, E. F. (2016). Implementation of evidence-based home visiting programs aimed at reducing child maltreatment: A meta-analytic review. *Child Abuse & Neglect*, *53*, 64-80. https://doi.org/10.1016/j.chiabu.2015.10.009

* Chacko, A., Fabiano, G. A., Doctoroff, G. L., & Fortson, B. (2018). Engaging Fathers in Effective Parenting for Preschool Children Using Shared Book Reading: A Randomized Controlled Trial. *Journal of Clinical Child & Adolescent Psychology*, *47*(1), 79-93. https://doi.org/10.1080/15374416.2016.1266648

Chen, M., & Chan, K. L. (2016). Effects of Parenting Programs on Child Maltreatment Prevention: A Meta-Analysis. *Trauma, Violence, & Abuse*, *17*(1), 88-104. https://doi.org/10.1177/1524838014566718

* Cheng, S. H. (2004). *Factors that influence the effectiveness of a parenting program for Asians and Pacific Islanders*. (Doctoral dissertation). https://www.proquest.com/docview/305138483?pq-origsite=gscholar&fromopenview=true

Cohen, L. J. (1977). *The Probable and The Provable*. Clarendon Press. https://doi.org/10.1093/acprof:oso/9780198244127.001.0001

Coore Desai, C., Reece, J., & Shakespeare-Pellington, S. (2017). The prevention of violence in childhood through parenting programmes: a global review. *Psychology, Health & Medicine*, *22*(sup1), 166-186. https://doi.org/10.1080/13548506.2016.1271952

* Day, J. J., & Sanders, M. R. (2018). Do Parents Benefit From Help When Completing a Self-Guided Parenting Program Online? A Randomized Controlled Trial Comparing Triple P Online With and Without Telephone Support. *Behavior Therapy*, *49*(6), 1020-1038. https://doi.org/10.1016/j.beth.2018.03.002

* DeGarmo, D. S., & Jones, J. A. (2019). Fathering Through Change (FTC) intervention for single fathers: Preventing coercive parenting and child problem behaviors. *Development & Psychopathology*, *31*(5), 1801-1811. https://doi.org/10.1017/S0954579419001019

Dishion, T. J., Nelson, S. E., & Kavanagh, K. (2003). The family check-up with high-risk young adolescents: Preventing early-onset substance use by parent monitoring. *Behavior Therapy*, *34*(4), 553-571. https://doi.org/https://doi.org/10.1016/S0005-7894(03)80035-7

Euser, S., Alink, L. R., Stoltenborgh, M., Bakermans-Kranenburg, M. J., & van, I. M. H. (2015). A gloomy picture: a meta-analysis of randomized controlled trials reveals disappointing effectiveness of programs aiming at preventing child maltreatment. *BMC Public Health*, *15*, Article 1068. https://doi.org/10.1186/s12889-015-2387-9

* Foskolos, K. (2015). *The acceptability and efficacy of a brief universal preventive parenting intervention for child behavioural and emotional disorders* (Doctoral dissertation). https://ora.ox.ac.uk/objects/uuid:cb6b28fb-12ad-4e81-b6d3-2134f7dfaec8

* Francis, T., & Baker-Henningham, H. (2021). The Irie Homes Toolbox: A cluster randomized controlled trial of an early childhood parenting program to prevent violence against children in Jamaica. *Children & Youth Services Review*, *126*, 106060. https://doi.org/10.1016/j.childyouth.2021.106060

* Fung, M. P., & Fox, R. A. (2014). The culturally-adapted Early Pathways program for young Latino children in poverty: A randomized controlled trial. *Journal of Latina/o Psychology*, *2*(3), 131-145. https://doi.org/10.1037/LAT0000019

* Furlong, M., Stokes, A., McGilloway, S., Hickey, G., Leckey, Y., Bywater, T., & Team, E. R. (unpublished). Examining the effectiveness of a wraparound-inspired intervention for parents with children at risk of child maltreatment: Outcomes from a multi-centre exploratory randomised controlled trial.

* Gardner, F., McCoy, A., Lachman, L. M., Melendez-Torres, G. J., Tapanya, S., & Loupha, S. (unpublished). Randomised trial of a parenting intervention in the Thai public health system for reducing violence against children.

Gilbert, R., Fluke, J., O'Donnell, M., Gonzalez-Izquierdo, A., Brownell, M., Gulliver, P., . . . Sidebotham, P. (2012). Child maltreatment: variation in trends and policies in

six developed countries. *The Lancet*, *379*(9817), 758-772. https://doi.org/10.1016/S0140-6736(11)61087-8

Global Partnership to End Violence Against Children. (2016). https://endcorporalpunishment.org/

* Gross, D., Garvey, C., Julion, W., Fogg, L., Tucker, S., & Mokros, H. (2009). Efficacy of the Chicago Parent Program with Low-Income African American and Latino Parents of Young Children. *Prevention Science*, *10*(1), 54-65. https://doi.org/10.1007/s11121-008-0116-7

Gubbels, J., van der Put, C. E., & Assink, M. (2019). The effectiveness of parent training programs for child maltreatment and their components: A meta-analysis. *International Journal of Environmental Research & Public Health*, *16*, 2404. https://doi.org/10.3390/ijerph16132404

* Guo, M., Morawska, A., & Sanders, M. R. (2016). A Randomized Controlled Trial of Group Triple P With Chinese Parents in Mainland China. *Behavior Modification*, *40*(6), 825-851. https://doi.org/10.1177/0145445516644221

* Guterman, N. B., Tabone, J. K., Bryan, G. M., Taylor, C. A., Napoleon-Hanger, C., & Banman, A. (2013). Examining the effectiveness of home-based parent aide services to reduce risk for physical child abuse and neglect: Six-month findings from a randomized clinical trial. *Child Abuse & Neglect*, *37*(8), 566-577. https://doi.org/10.1016/j.chiabu.2013.03.006

Guyatt, G. H., Oxman, A. D., Schünemann, H. J., Tugwell, P., & Knottnerus, A. (2011). GRADE guidelines: A new series of articles in the Journal of Clinical Epidemiology. *Journal of Clinical Epidemiology*, *64*(4), 380-382. https://doi.org/10.1016/j.jclinepi.2010.09.011

* Harris, S. E., Fox, R. A., & Love, J. R. (2015). Early Pathways Therapy for Young Children in Poverty. *Counseling Outcome Research & Evaluation*, *6*(1), 3-17. https://doi.org/10.1177/2150137815573628

* Herbert, S. D. (2013). *Parent training for families of hyperactive preschool-aged children*. (Doctoral dissertation). https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1805&context=open_access_dissertations

Higgins, J. P., Altman, D. G., Gøtzsche, P. C., Jüni, P., Moher, D., Oxman, A. D., . . . Sterne, J. A. (2011). The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ*, *343*, d5928. https://doi.org/10.1136/bmj.d5928

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2022). *Cochrane Handbook for Systematic Reviews of Interventions version 6.3* Cochrane. www.training.cochrane.org/handbook (updated February 2022)

Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global Prevalence of Past-year Violence Against Children: A Systematic Review and Minimum Estimates. *Pediatrics*, *137*(3), e20154079. https://doi.org/10.1542/peds.2015-4079

* Javier, J. R., Coffey, D. M., Schrager, S. M., Palinkas, L. A., & Miranda, J. (2016). Parenting intervention for prevention of behavioral problems in elementary school-age Filipino-American children: A pilot study in churches. *Journal of Developmental & Behavioral Pediatrics*, *37*(9), 737-745. https://doi.org/10.1097/DBP.0000000000000342

Jeong, J., Pitchik, H. O., & Fink, G. (2021). Short-term, medium-term and long-term effects of early parenting interventions in low- and middle-income countries: a systematic review. *BMJ Global Health*, *6*(3), e004067. https://doi.org/10.1136/bmjgh-2020-004067

* Jouriles, E. N., McDonald, R., Rosenfield, D., Stephens, N., Corbitt-Shindler, D., & Miller, P. C. (2009). Reducing conduct problems among children exposed to intimate partner violence: a randomized clinical trial examining effects of Project Support. *Journal of Consulting & Clinical Psychology*, *77*(4), 705-717. https://doi.org/10.1037/a0015994

* Jouriles, E. N., McDonald, R., Spiller, L., Norwood, W. D., Swank, P. R., Stephens, N., . . . Buzy, W. M. (2001). Reducing conduct problems among children of battered women. *Journal of Consulting & Clinical Psychology*, *69*(5), 774-785. https://doi.org/10.1037/0022-006X.69.5.774

Kennedy, S. C., Kim, J. S., Tripodi, S. J., Brown, S. M., & Gowdy, G. (2016). Does parent–child interaction therapy reduce future physical abuse? A meta-analysis. *Research on Social Work Practice*, *26*(2), 147-156. https://doi.org/10.1177/1049731514543024

* Knox, M., Burkhart, K., & Cromly, A. (2013). Supporting positive parenting in community health centers: the ACT Raising Safe Kids Program. *Journal of Community Psychology*, *41*(4), 395-407. https://doi.org/10.1002/jcop.21543

* Lachman, J. M., Alampay, L. P., Jocson, R. M., Alinea, C., Madrid, B., Ward, C., . . . Gardner, F. (2021). Effectiveness of a parenting programme to reduce violence in a cash transfer system in the Philippines: RCT with follow-up. *The Lancet Regional Health - Western Pacific*, *17*, 100279. https://doi.org/10.1016/j.lanwpc.2021.100279

* Lachman, J. M., Cluver, L., Ward, C. L., Hutchings, J., Mlotshwa, S., Wessels, I., & Gardner, F. (2017). Randomized controlled trial of a parenting program to reduce the risk of child maltreatment in South Africa. *Child Abuse & Neglect*, *72*, 338-351. https://doi.org/10.1016/j.chiabu.2017.08.014

Leijten, P., Melendez-Torres, G. J., Knerr, W., & Gardner, F. (2016). Transported versus homegrown parenting interventions for reducing disruptive child behavior: A multilevel meta-regression study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *55*(7), 610-617. https://doi.org/10.1016/j.jaac.2016.05.003

* Leijten, P., Raaijmakers, M. A. J., Orobio de Castro, B., van den Ban, E., & Matthys, W. (2017). Effectiveness of the Incredible Years parenting program for families with socioeconomically disadvantaged and ethnic minority backgrounds. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 59-73. https://doi.org/10.1080/15374416.2015.1038823

* Lessard, J., Normandeau, S., & Robaey, P. (2016). Effects of the Incredible Years Program in Families of Children with ADHD. *Journal of Child & Family Studies*, *25*(12), 3716-3727. https://doi.org/10.1007/s10826-016-0509-3

* Lester, S. N. (2015). *Evaluation of the Parent Centre's positive parenting skills training programme: a randomised controlled trial* (Doctoral dissertation). https://open.uct.ac.za/handle/11427/15615

* Leung, C., Tsang, S., Ng, G. S. H., & Choi, S. Y. (2017). Efficacy of Parent–Child Interaction Therapy With Chinese ADHD Children: Randomized Controlled Trial. *Research on Social Work Practice*, *27*(1), 36-47. https://doi.org/10.1177/1049731516643837

* Leung, C., Tsang, S., Sin, T. C. S., & Choi, S.-y. (2015). The Efficacy of Parent–Child Interaction Therapy With Chinese Families: Randomized Controlled Trial. *Research on Social Work Practice*, *25*(1), 117-128. https://doi.org/10.1177/1049731513519827

Lipsey, M. W. (2003). Those confounded moderators in meta-analysis: Good, bad, and ugly. *The Annals of the American Academy of Political & Social Science*, *587*(1), 69-81. https://doi.org/10.1177/0002716202250791

Marmor, A., Cohen, N., & Katz, C. (2023). Child Maltreatment During COVID-19: Key Conclusions and Future Directions Based on a Systematic Literature Review. *Trauma, Violence, & Abuse*, *24*(2), 760-775. https://doi.org/10.1177/15248380211043818

McCoy, A., Melendez-Torres, G. J., & Gardner, F. (2020). Parenting interventions to prevent violence against children in low- and middle-income countries in East and Southeast Asia: A systematic review and multi-level meta-analysis. *Child Abuse & Neglect*, *103*, 104444. https://doi.org/10.1016/j.chiabu.2020.104444

* Menting, A. T. A., de Castro, B. O., Wijngaards-de Meij, L. D. N. V., & Matthys, W. (2014). A Trial of Parent Training for Mothers Being Released From Incarceration and Their Children. *Journal of Clinical Child & Adolescent Psychology*, *43*(3), 381-396. https://doi.org/10.1080/15374416.2013.817310

Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 1-12. https://doi.org/10.1186/1748-5908-6-42

Middleton, K. R., Anton, S. D., & Perri, M. G. (2013). Long-Term Adherence to Health Behavior Change. *American Journal of Lifestyle Medicine*, *7*(6), 395-404. https://doi.org/10.1177/1559827613488867

* Miller-Heyl, J., MacPhee, D., & Fritz, J. J. (1998). DARE to be You: A Family-Support, Early Prevention Program. *Journal of Primary Prevention*, *18*(3), 257-285. https://doi.org/10.1023/A:1024602927381

* Nicholson, B., Anderson, M., Fox, R., & Brenner, V. (2002). One Family at a Time: A Prevention Program for At-Risk Parents. *Journal of Counseling & Development*, *80*(3), 362-371. https://doi.org/10.1002/j.1556-6678.2002.tb00201.x

* Nogueira, S., Abreu-Lima, I., Canário, C., & Cruz, O. (2021). Group Triple P – A randomized controlled trial with low-income mothers. *Children and Youth Services Review*, *121*, 105862. https://doi.org/10.1016/j.childyouth.2020.105862

* Olivares, J., Rosa, A. I., & López, L. J. G. (1997). El papel del vídeo en el entrenamiento a madres: un estudio comparativo [The role of video in training mothers]. *Psícologia Conductual*, *5*(2), 237-254.

* Oveisi, S., Ardabili, H. E., Dadds, M. R., Majdzadeh, R., Mohammadkhani, P., Rad, J. A., & Shahrivar, Z. (2010). Primary prevention of parent-child conflict and abuse in Iranian mothers: A randomized-controlled trial. *Child Abuse & Neglect*, *34*(3), 206-213. https://doi.org/10.1016/j.chiabu.2009.05.008

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., . . . Brennan, S. E. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery*, *88*, 105906. https://doi.org/10.1016/j.ijsu.2021.105906

Patterson, G. R. (1982). *Coercive family process* (Vol. 3). Castalia Publishing Company.

Perri, M. G. (1998). The maintenance of treatment effects in the long-term management of obesity. *Clinical Psychology: Science and Practice*, *5*(4), 526. https://doi.org/10.1111/j.1468-2850.1998.tb00172.x

* Peterson, L., Tremblay, G., Ewigman, B., & Popkey, C. (2002). The parental daily diary: a sensitive measure of the process of change in a child maltreatment prevention program. *Behavior Modification*, *26*(5), 627-647. https://doi.org/10.1177/014544502236654

Pinquart, M., & Teubert, D. (2010). Effects of parenting education with expectant and new parents: A meta-analysis. *Journal of Family Psychology*, *24*(3), 316-327. https://doi.org/10.1037/a0019691

* Portwood, S. G., Lambert, R. G., Abrams, L. P., & Nelson, E. B. (2011). An Evaluation of the Adults and Children Together (ACT) Against Violence Parents Raising Safe Kids Program. *The Journal of Primary Prevention*, *32*(3), 147-160. https://doi.org/10.1007/s10935-011-0249-5

* Prinz, R. J., Sanders, M. R., Shapiro, C. J., Whitaker, D. J., & Lutzker, J. R. (2009). Population-Based Prevention of Child Maltreatment: The U.S. Triple P System Population Trial. *Prevention Science*, *10*(1), 1-12. https://doi.org/10.1007/s11121-009-0123-3

* Pruett, M. K., Cowan, P. A., Cowan, C. P., Gillette, P., & Pruett, K. D. (2019). Supporting Father Involvement: An Intervention With Community and Child Welfare–Referred Couples. *Family Relations*, *68*(1), 51-67. https://doi.org/10.1111/fare.12352

* Rincón, P., Cova, F., Saldivia, S., Bustos, C., Grandón, P., Inostroza, C., . . . King, M. (2018). Effectiveness of a positive parental practices training program for Chilean preschoolers' families: a randomized controlled trial. *Frontiers in Psychology*, *9*, 1751. https://doi.org/10.3389/fpsyg.2018.01751

Rodgers, M. A., & Pustejovsky, J. E. (2021). Evaluating meta-analytic methods to detect selective reporting in the presence of dependent effect sizes. *Psychological Methods*, *26*(2), 141-160. https://doi.org/10.1037/met0000300

* Selby, E., Allabyrne, C., & Keenan, J. R. (2021). Delivering clinical evidence-based child–parent interventions for emotional development through a digital platform: A

feasibility trial. *Clinical Child Psychology & Psychiatry*, *26*(4), 1271-1283. https://doi.org/10.1177/13591045211041580

* Self-Brown, S., Osborne, M. C., Boyd, C., DeVeausse Brown, N., Rostad, W., Patterson, A., . . . Lai, B. (2018). The impact of SafeCare® Dads to Kids program on father maltreatment risk and involvement: Outcomes and lessons learned from an efficacy trial. *Child Abuse & Neglect*, *83*, 31-41. https://doi.org/10.1016/j.chiabu.2018.06.014

* Silovsky, J. F., Bard, D., Chaffin, M., Hecht, D., Burris, L., Owora, A., . . . Lutzker, J. (2011). Prevention of child maltreatment in high-risk rural families: A randomized clinical trial with child welfare outcomes. *Children and Youth Services Review*, *33*(8), 1435-1444. https://doi.org/https://doi.org/10.1016/j.childyouth.2011.04.023

* Sim, A., Puffer, E., Green, E., Chase, R., Zayzay, J., Garcia-Rolland, E., & Boone, L. (2014). Parents make the difference: findings from a randomized impact evaluation of a parenting program in rural Liberia. *New York: International Rescue Committee*. https://www.rescue.org/sites/default/files/document/704/parentsmakedifferencereportfinal18nov14.pdf

* Smith, M. J. (2010). *Perceptions of parenting practices of incarcerated fathers who have received parent training and those who have not in a federal prison in a northeastern urban community* (Doctoral dissertation) https://www.proquest.com/pqdtglobal/docview/820813131/6D98AADE747E4728PQ/1?accountid=13042

* Solís-Cámara, P., Medina Cuevas, Y., & Díaz Romero, M. (2015). Análisis comparativo de predictores potenciales de prácticas disciplinarias severas con preescolares, antes y después de un entrenamiento para padres [Comparative analysis of

predictive factors of severe disciplinary practices with preschoolers, before and after parent training]. *Acta Colombiana de Psicologia*, *18*(2), 139-150. https://doi.org/10.14718/ACP.2015.18.2.12

* Solís-Cámara, P., Salcido, P. C., Romero, M. D., & Aguirre, B. R. (2004). Efectos multidimensionales de un programa de crianza en la interacclón recíproca entre padres y sus niños pequeños con problemas de comportamiento [Multidimensional effects of a parenting program on the reciprocal interaction between parents and their young children with behavior problems]. *Psícologia Conductual*, *12*, 197-214.

Solís-Cordero, K., Duarte, L. S., & Fujimori, E. (2022). Effectiveness of Remotely Delivered Parenting Programs on Caregiver-child Interaction and Child Development: a Systematic Review. *Journal of Child & Family Studies*. https://doi.org/10.1007/s10826-022-02328-8

* Sourander, A., McGrath, P. J., Ristkari, T., Cunningham, C., Huttunen, J., Lingley-Pottie, P., . . . Unruh, A. (2016). Internet-Assisted Parent Training Intervention for Disruptive Behavior in 4-Year-Old Children: A Randomized Clinical Trial. *JAMA Psychiatry*, *73*(4), 378-387. https://doi.org/10.1001/jamapsychiatry.2015.3411

* Spaccarelli, S., Cotler, S., & Penman, D. (1992). Problem-solving skills training as a supplement to behavioral parent training. *Cognitive Therapy & Research*, *16*(1), 1-17. https://doi.org/10.1007/BF01172953

Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R., & van IJzendoorn, M. H. (2015). The prevalence of child maltreatment across the globe: Review of a series of meta-analyses. *Child Abuse Review*, *24*(1), 37-50. https://doi.org/10.1002/car.2353

Tanner-Smith, E. E., Tipton, E., & Polanin, J. R. (2016). Handling complex meta-analytic data structures using robust variance estimates: A tutorial in R. *Journal of*

Developmental and Life-Course Criminology, *2*(1), 85-112. https://doi.org/10.1007/s40865-016-0026-5

UN. (1989). *Convention on the Rights of the Child*. https://www.ohchr.org/sites/default/files/crc.pdf

UN. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development. Resolution A/RES/70/1. Adopted September, 2015*. United Nations. https://sdgs.un.org/2030agenda

UNICEF. (2014). *Hidden in plain sight: A statistical analysis of violence against children*. https://data.unicef.org/resources/hidden-in-plain-sight-a-statistical-analysis-of-violence-against-children/

van der Put, C. E., Assink, M., Gubbels, J., & Boekhout van Solinge, N. F. (2018). Identifying Effective Components of Child Maltreatment Interventions: A Meta-analysis. *Clinical Child and Family Psychology Review*, *21*(2), 171-202. https://doi.org/10.1007/s10567-017-0250-5

* Villodas, M. T., Moses, J. O., Cromer, K. D., Mendez, L., Magariño, L. S., Villodas, F. M., & Bagner, D. M. (2021). Feasibility and promise of community providers implementing home-based parent-child interaction therapy for families investigated for child abuse: A pilot randomized controlled trial. *Child Abuse & Neglect*, *117*, 105063. https://doi.org/10.1016/j.chiabu.2021.105063

Vlahovicova, K., Melendez-Torres, G. J., Leijten, P., Knerr, W., & Gardner, F. (2017). Parenting Programs for the Prevention of Child Physical Abuse Recurrence: A Systematic Review and Meta-Analysis. *Clinical Child Family Psychology Review*, *20*(3), 351-365. https://doi.org/10.1007/s10567-017-0232-7

Volpp, K. G., Troxel, A. B., Pauly, M. V., Glick, H. A., Puig, A., Asch, D. A., . . . Audrain-McGovern, J. (2009). A Randomized, Controlled Trial of Financial

Incentives for Smoking Cessation. *New England Journal of Medicine*, *360*(7), 699-709. https://doi.org/10.1056/NEJMsa0806819

* Ward, C. L., Wessels, I. M., Lachman, J. M., Hutchings, J., Cluver, L. D., Kassanjee, R., . . . Gardner, F. (2020). Parenting for Lifelong Health for Young Children: a randomized controlled trial of a parenting program in South Africa to prevent harsh parenting and child conduct problems. *Journal of Child Psychology & Psychiatry*, *61*(4), 503-512. https://doi.org/10.1111/jcpp.13129

* Webster-Stratton, C. (1984). Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Consulting & Clinical Psychology*, *52*(4), 666-678. https://doi.org/10.1037/0022-006X.52.4.666

* Webster-Stratton, C. (1990). Enhancing the effectiveness of self-administered videotape parent training for families with conduct-problem children. *Journal of Abnormal Child Psychology*, *18*(5), 479-492. https://doi.org/10.1007/BF00911103

WHO. (2016). *INSPIRE: Seven strategies for ending violence against children*. https://www.who.int/publications/i/item/9789241565356

WHO. (2023). WHO guidelines on parenting interventions to prevent maltreatment and enhance parent-child relationships with children aged 0–17 years. https://www.who.int/teams/social-determinants-of-health/violence-prevention/parenting-guidelines

* Wolfe, D. A., Edwards, B., Manion, I., & Koverola, C. (1988). Early intervention for parents at risk of child abuse and neglect: A preliminary investigation. *American Psychological Association*, 40-47. https://doi.org/10.1037/0022-006X.56.1.40

Wood, W., & Neal, D. T. (2016). Healthy through habit: Interventions for initiating & maintaining health behavior change. *Behavioral Science & Policy*, *2*(1), 71-83. https://doi.org/10.1353/bsp.2016.0008

* Yao, A., Shimada, K., Kasaba, R., & Tomoda, A. (2022). Beneficial Effects of Behavioral Parent Training on Inhibitory Control in Children With Attention-Deficit/Hyperactivity Disorder: A Small-Scale Randomized Controlled Trial. *Frontiers in Psychiatry*, *13*, 859249. https://doi.org/10.3389/fpsyt.2022.859249

* Zahra, E. D., Nazanin, V., Reza, E. M., Sima, K., & Zohreh, S. (2014). Implementation of mother-training program to improve parenting in pre-school age children: a randomized-controlled trial. *North American Journal of Medical Sciences*, *6*(8), 391-395. https://doi.org/10.4103/1947-2714.139289

6 Equity effects of parenting interventions to reduce physical and emotional violence: Individual participant data and traditional meta-analysis

This is the third paper of this DPhil thesis which aims to investigate differential effects in parenting interventions. It uses aggregate-level meta-analysis and individual participant data meta-analysis to examine whether four factors of social disadvantage (low income, low education, joblessness, ethnic minority status) moderate the effects of parenting interventions to reduce violence against children.

This paper is unpublished and currently prepared for publication.

Sophia Backhaus[1]

Patty Leijten[2]

G.J. Melendez-Torres[3]

Frances Gardner[1]

[1]Center for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford, United Kingdom

[2]Research Institute Child Development and Education, University of Amsterdam, the Netherlands

[3]Medical School, University of Exeter, United Kingdom

Statement of Authorship

I confirm that I completed the majority of work in this study. I coordinated all previous review articles, harmonised the two additional datasets, ran the analyses, and wrote the paper. Patty Leijten, Frances Gardner, and I were responsible for the conception, design, interpretation of results and overall oversight of the review. G.J. Melendez-Torres supported me in conducting the statistical analyses.

Abstract

Introduction: Violence against children happens most often in the home by parents. Parenting interventions based on social learning theory support parents in using alternatives to violent disciplining and are promoted across the world as an effective strategy to reduce physical and emotional violence. As with other public health interventions, parenting interventions carry the risk to widen social inequalities in society, should they benefit advantaged families more. We examined this risk by testing differential parenting intervention effects by social disadvantage on violence against children.

Method: This study harnesses the strengths of individual participant data meta-analysis and traditional aggregate-level meta-analysis to investigate whether socio-economic disadvantage (income, education, employment) and belonging to an ethnic minority moderate the effects of parenting interventions on violence against children: (a) European individual participant data meta-analysis (IPDMA) of European trials of the Incredible Years parenting intervention (k = 15, n = 1,999, age = 2−11); (b) global trial-level robust variance estimation meta-analysis of trials of 32 different social learning theory-based parenting interventions (k = 56, n = 8,155, M_{age} = 2−10). **Results:** Parents across both meta-analyses reported an overall reduction in violence against their children after participating in a parenting intervention (physical violence: IPDMA: β = –.21, 95% CI [–.33, –.19]; physical and emotional violence:

aggregate-level meta-analysis: $d = -0{\cdot}37$; 95% CI [–0·47, –0·27]). Both analyses found no evidence that families of social disadvantage in terms of income level, education, employment, or ethnicity, benefitted less (or more) from parenting interventions.

Discussion: Parenting interventions are unlikely to widen social inequalities in violence against children. This knowledge is very timely given the official recommendation from the World Health Organization to make parenting interventions based on social learning theory available to parents and consequent amplified policy interest.

Introduction

Violence against children is a widespread public health concern with far-reaching consequences, including adverse outcomes in mental and physical health across the life-course (Carr et al., 2020). Like many other health threats, violence against children follows an inequality gradient by social disadvantage (Coulton et al., 2007; Cuartas et al., 2019). Studies consistently show higher prevalence rates of violence against children in economically and socially disadvantaged families, such as those with low financial resources (Hunter & Flores, 2021), limited education (Cerna-Turoff et al., 2021), joblessness (Judd et al., 2023), and belonging to an ethnic minority (Grogan-Kaylor & Otis, 2007; Skafida et al., 2022), however, the latter might be largely driven by higher poverty rates in ethnic minority groups (Kim & Drake, 2018). Therefore, children growing up in social disadvantaged circumstances face a significant higher risk of experiencing violence, which in turn can further perpetuate social disadvantage, leading to lower levels of education, fewer employment opportunities, reduced earnings, and fewer assets in adulthood (Currie & Spatz Widom, 2010; Zielinski, 2009).

Accordingly, the prevention of violence against children holds significant potential towards improved quality of life, and has been recognised as a key Sustainable Development

Goal (UN, 2015). One key strategy, as promoted by the World Health Organization and multiple international partners (WHO, 2016), is the support of parents and key caregivers. Parents have been identified as the main perpetrators of violence against children (U.S. Department of Health and Human Services, 2006), and violence is perpetrated often within the context of disciplining a child (UNICEF, 2014). Parenting interventions provide parents and key caregivers with non-violent disciplining techniques and enhance the relationship between parent and child. The most widely distributed and evaluated parenting interventions are those based on social learning theory. Social learning theory (Bandura, 1977) suggests that children learn behaviours by observing their parents and through operant learning involving reward and punishment. In coercive interactions, violent behaviours are unintentionally reinforced (Patterson, 1982). Within a coercive parent–child violence cycle, the child's non-compliance provokes anger in the parent, resulting in a violent response. This response reinforces the child's disruptive behaviour, escalating the parent's use of more severe violent measures. Social learning theory-based interventions aim to break this coercive cycle by promoting effective alternative behaviour management skills, including positive reinforcement of appropriate child behaviours and non-violent disciplinary techniques such as applying logical consequences and ignoring negative attention-seeking behaviours (Kaehler et al., 2016; Leijten et al., 2019).

Previous evidence syntheses suggest that these interventions effectively reduce violence against children (Backhaus et al., 2023; Chen & Chan, 2016). However, notably, parenting interventions show significant heterogeneity in their main effects, suggesting that not every parent responds equally to parenting interventions. While there is evidence that parents from social disadvantage have lower attendance rates in parenting interventions (Berry et al., 2022), limited research has investigated whether parenting interventions are equally effective for families experiencing social disadvantage. To our knowledge, only two

meta-analyses conducted at the aggregate level have examined whether the effects of parenting interventions on parenting behaviours is moderated by social disadvantage (Euser et al., 2015; Lundahl et al., 2006). The findings from these studies have been inconclusive: one meta-analysis reported less improvement in general parenting skills in disadvantaged families (Lundahl et al., 2006), whereas another found equal effects for parents of varying levels of socio-economic status and ethnicities in reducing child maltreatment (Euser et al., 2015). While meta-analyses on aggregate level have long been criticised for not being well-powered to produce credible moderation results (Brown et al., 2013), evidence from meta-analysis on individual level with a focus on a different outcome (i.e., child conduct problems) suggest equal effects for parents based on social disadvantage factors such as education or ethnic background (Gardner et al., 2019; Leijten et al., 2018), as well as poverty, lone parenthood, teenage parenthood, or household joblessness (Gardner et al., 2019). However, we cannot assume that findings will be same for violence against children because the specific outcome of an intervention may be achieved by different components within interventions. For example, it is possible that parents facing socio-economic stress might find it easier to apply more positive parenting strategies such as the use of praise which in turn might improve child behaviours; yet, they might struggle to apply non-violent discipline strategies in situations of conflict due to the levels of stress these families experience.

As with other social interventions, parenting interventions bare the risk of widening social inequalities by disproportionally reducing violence rates in advantaged families (Lorenc et al., 2013). It is of crucial importance and urgency to understand whether this potential for inequality exists, particularly, considering the widespread of parenting interventions and multiple scale-up efforts. To reach this understanding, we combine in this study traditional meta-analysis and individual participant data meta-analysis. Traditional aggregate-level meta-analyses make use of data available at the level of the trial, such as the

post-test data at group level or averaged baseline demographics. The advantage of this approach is that all reported studies can be included in the analysis, hence, presenting a wider range of studies across the globe. A disadvantage of this approach is that it is not well-powered to investigate moderators (Lipsey, 2003). This is because moderation effects can only be examined on aggregate level and, thus, limits the sample size in the analysis to the number of included trials that provide data for the moderator and outcome of interest. In addition, it is at risk for ecological bias (Berlin et al., 2002), because conclusions we draw from this type of analysis can only be made on group-level data, masking all variation at the individual family level. Consequently, those moderation effects may not necessarily hold true at the individual level. Individual participant data (IPD) meta-analysis, in contrast, is particularly well-suited to test moderation effects. In an IPD meta-analysis, raw individual participant level data is obtained from each study and used for synthesis. While IPD has significant benefits, particularly for moderation analysis, its limited generalisability poses a challenge in social inequity questions, particularly given that the IPD dataset included in this study focuses on European countries only. In addition, obtaining and harmonizing individual-level data from numerous published trials is rare and extremely labour-intensive (Berlin et al., 2002) limiting the number of trials than can be included.

In order to examine differential effects in reducing violence against children by social disadvantage, we aim to harness the strengths of both types of meta-analyses by replicating the findings from the highly rigorous IPD moderation analysis in a wider set of parenting interventions, geographical locations, and cultural contexts using traditional meta-analysis. Furthermore, we utilised the PROGRESS-Plus framework (Jull et al., 2017) to conceptualize social disadvantage. Since analysing all PROGRESS dimensions may result in issues of multiplicity (Bloom & Michalopoulos, 2013), we focused specifically on the dimensions of socioeconomic status (i.e., income, education, joblessness) and ethnicity given the challenges

these families face due to inequity, discrimination, and economic stress (Myers, 2009). Considering that most previous individual-level and aggregate-level evidence syntheses found no moderation effect for parenting interventions by social disadvantage, we hypothesise that there will be no differential effects for parents and key caregivers with varying levels of social disadvantage in reducing physical and emotional violence.

Methods

We report these two systematic reviews and meta-analyses according to the Preferred Reporting Items for Systematic reviews and Meta-analyses guidelines (PRISMA), PRISMA IPD reporting guidelines, and used Cochrane guidance for systematic reviews of interventions (Higgins et al., 2019; Page et al., 2021; Stewart et al., 2015). Both analyses focused on the moderation by income, education, employment, and ethnic minority status of the effects of social learning theory-based parenting interventions on physical and emotional violence by parents of children aged 1–12 years (Table 6.1). All analyses were pre-registered in PROSPERO (Study 1: CRD42022262594, appendix 1; Study 2: CRD42019141844, appendix 3). Ethics approval was granted by the University of Oxford, Social Policy and Intervention Departmental Research Ethics Committee (appendix 2), and the University of Amsterdam, Faculty of Social and Behavioural Science (2020-CDE-12838).

Study 1: Aggregate-level meta-analysis

Eligibility and identification of studies

We conducted a systematic review of parenting interventions based on social learning theory for parents of children with a mean age between 2 and 10 years. We included randomised controlled trials with a no treatment, wait-list, minimal intervention, or care as usual control group. Parenting interventions were considered for inclusion when a minimum of 50% of sessions or content was directed at parents and the program was guided by a strong

social learning theoretical foundation. For this research question, we included only trials that examined physical and emotional violence against children (see *Data collection and risk of bias)*

We included trials from our systematic review completed in 2014 that used the same inclusion and exclusion criteria (Leijten et al., 2016). We updated this review by searching a total of 11 databases between January 01, 2014 and August 01, 2022 (appendix 6.1). In addition, we included eligible trials from our recent systematic review that covered studies from low- and middle-income countries and deployed a comprehensive search strategy (26 databases) with an exhaustive grey literature and multi-language search in English, Thai, Spanish, Chinese, Farsi, and Russian (CRD42018088697; search updated in August 2022) (Backhaus & Gardner et al., 2023). We imposed no language restrictions. Search terms surrounded three conceptual categories: a. intervention, b. parenting, c. child behavioural and emotional problems or maltreatment/violence. The full search strategy can be found in appendix 5.7. In addition, we hand-searched the reference lists of 29 relevant systematic reviews identified in our searches, and contacted authors by e-mail to request study results and unpublished manuscripts identified through trial registries. Two reviewers pilot tested the screening criteria on a random sample of 55 records. One reviewer screened 100% of the titles and abstracts and retrieved and screened all relevant full-text articles for eligibility. A second reviewer double-screened a random 20% of titles and abstracts, and a random 20% of full-texts. Finally, we checked the articles that met the inclusion criteria for duplicate reporting of the same data.

Data collection, risk of bias

Aggregate-level data was independently extracted by three reviewers using a piloted data extraction sheet. Extracted data included information on the publication (e.g., published vs. unpublished study), study setting/context (e.g., rural vs. urban setting); intervention

characteristics (e.g., delivery mode); and study population (e.g., household income). The outcome of interest for this study was physical and emotional violence against children. We included scores of scales where at least 50% of items measured either physical or emotional violent parenting behaviours. Instrument selection was based on a previous analysis of questionnaire items on physical and emotional violent parenting behaviours (Backhaus et al., 2022). Social disadvantage was measured with four indicators. Low income was defined as most participating families in a trial being of low-income, e.g., receiving income-related financial benefits, scoring below the Hollingshead Index's low-socioeconomic threshold, living in social housing, or a clear description by the trial authors as a low-income sample. Lower educational level was based on UNESCO's international standard classification of education 2011, such that lower means that most participating parents in a trial completed only primary or lower secondary education. Joblessness was based on whether most participating parents in a trial had paid employment. Ethnic minority status was indicated by whether participating parents in a trial were from an ethnic minority in the trial country (Table 6.1). We assessed risk of bias of included studies using the Cochrane Risk of Bias Tool for RCTs (Higgins et al., 2011).

Data synthesis and analysis

We aimed to assess whether any of the four binary trial-level measures of social disadvantage moderated the effect of parenting interventions on physical and emotional violence scores after the intervention. For this, we calculated Cohen's *d* using the post sample size, means and standard deviations for intervention and control group. Where these data were not reported, we contacted the trial authors, and if we did not receive a reply, used relevant model statistics that were based preferably on intention-to-treat analyses. Robust variance estimation (RVE) was used to synthesize effect sizes using the robumeta package in Stata (Tanner-Smith et al., 2016). Main effects had been previously reported

Table 6.1. Study variables and definitions

	Study 1 – IPD meta-analysis	**Study 2 – Aggregate-level meta-analysis**
Outcome: Parental physical and emotional violence	Physical violence at post-test by individual parents randomized to receive either an intervention or control.	Standardized mean difference (i.e., intervention versus control) at post-test of physical and emotional violence.
Moderators: Low income	Household? low income (1 = yes; 0 = no) if family received financial benefits, have a low median income, score below the low SES threshold on the Hollingshead Index, or live in social housing (or with family/friends instead of renting/owning own house).	Sample low income (1 = yes; 0 = no) if majority of families in the trial have low-income.
Joblessness	Household joblessness (1 = yes; 0 = no) if there is no employed parent in the household.	Sample joblessness (1 = yes; 0 = no) if majority of participating parents are unemployed.
Education	Parent lower education (1 = yes; 0 = no) if participant parent received primary or lower secondary education.	Sample lower education (1 = yes; 0 = no) if majority of participating parents have low levels of education.
Ethnicity	Parent ethnic minority (1=yes; 0 = no) if participating parent is from an ethnic minority in trial country.	Sample ethnic minority (1 = yes; 0 = no) if majority of families were from an ethnic minority in the trial country.

(Backhaus et al., 2023). RVE meta-regression analysis allows to include all effect sizes even when the nature of their dependence is unknown. We used a random effects meta-regression model and assumed an intercorrelation of 0.8. Heterogeneity (I^2) was calculated using the Q-value and degrees of freedom obtained from the RVE meta-analyses.

Study 2: Individual participant data meta-analysis

Eligibility & identification of studies

This study updated our previous individual participant dataset of European randomised controlled trials of the Incredible Years (IY) parenting intervention (Leijten et al., 2018), using the same search strategy as described in Study 1 (August 2022). We included randomised controlled trials of the standardised version of the Incredible Years programme for children aged 1–12 years. The first and second author assessed the Study 1 trials for inclusion in this IPD meta-analysis.

Data collection & integrity

We requested all available fully anonymized data for all newly identified trials of the IY programme. Data sharing agreements that specified ethics and ownership were signed by all investigators. The raw data was then checked for completeness, scale validity, internal consistency, and baseline imbalance. Trial quality was assessed using the Cochrane Risk of Bias Tool. Violence against children was operationalised in these studies as physical violent parenting behaviours (e.g., spanking, grabbing a child) and measured with the Alabama Parenting Questionnaire (*n = 2;* Frick, 1991), Parenting Practice Inventory (*n = 6;* Webster-Stratton, 1998), Parenting Scale (*n = 4;* Arnold et al., 1993), and a semi-structured parenting interview (*n = 4;* Scott et al., 2001). Items were selected based on a previous analysis of questionnaire items on physical and emotional violent parenting behaviours (Backhaus et al., 2022). Example items were “I spank, grab, slap or hit my child most of the time” (Parenting

Scale), “You slap your child when he/she has done something wrong” (Alabama Parenting Questionnaire), “If your child refused to do what you wanted him/her to do, how likely is it that you would use each of the following discipline techniques? a. Give your child a spanking, b. Slap or hit your child (but not spanking)” (Parenting Practice Inventory), “Thinking about last week, how many times did you give your child a tap or smack if he/she misbehaved?” (Parenting Interview)). We were unable to include planned analyses on emotional violence because the relevant items were very heterogeneous and did not clearly indicate violence (e.g., “I get so frustrated or angry that my child can see I’m upset” (Parenting Scale) and “How often do you do each of the following things when your child misbehaves? Raise your voice (scold or yell)” (Parenting Practice Inventory).

We included the same four indicators of social disadvantage in this analysis, however, in this analysis judged based on individual family characteristics: (1) Low income, defined as participating family receiving income-related financial benefits, scoring below the Hollingshead Index’s low-socioeconomic threshold, or living in social housing, (2) Low educational level of participating parent based on UNESCO’s international standard classification of education 2011 (i.e., completing only primary or lower secondary education; UNESCO, 2011), (3) Joblessness, indicated by there being no parent in the household who was employed, and (4) Ethnic minority status, indicated by whether the participating parent’s ethnic background was any category other than white (Office for National Statistics classification). Risk of bias of included studies was assessed using the Cochrane Risk of Bias Tool for RCTs (Higgins et al., 2011).

Data synthesis and analysis

All analyses used one-stage multilevel modelling with random effects to capture the hierarchical structure of the data, included trial level by trial-specific fixed effect, and fitted resulting models by maximum likelihood, which is valid under a missing at random (MAR)

assumption about the missing data. The first analysis established a main effect of condition including baseline physical violence levels as a covariate. The second set of analyses aimed to assess whether any of the binary participant-level moderators of social disadvantage moderated the effect of the IY programme on post-test physical violence scores. The model used post-test physical violence scores as the dependent variable and fixed effects for trial group, trial-level moderators (between-trial), participant-level deviations from trial summaries (within-trial), and respective interaction terms. Pre-test physical violence scores were included as fixed effects as possible confounder. We applied a one-stage model (Fisher et al., 2017) to take into account the hierarchical structure with families (level 1) nested within trials (level 2), variation in design, and missing data. Analyses were done in Stata (version 16).

Results

Study 1: Aggregate-level meta-analysis

A total of 346 trials were eligible for inclusion, but only 60 trials reported physical or emotional violence outcomes of which 56 reported sufficient statistical detail to be included in the meta-analysis. Parenting interventions were evaluated in 23 countries across various country-income groups. Most trials were conducted in high-income countries (78%, $k = 47$). Mean age for children was 4.97 years ($SD = 1.78$). Most interventions targeted families at risk for maltreatment (selective prevention; 50%, $n = 30$), followed by universal prevention (33%, $n = 20$). Only a few interventions targeted families based on elevated levels of violence such as presence of corporal punishment (indicated prevention, 10%, $n = 6$), or previous referral to child protection services based on a history of maltreatment (treatment, 7%, $n = 4$). Sample size ranged from 12 to 796 families. Most programs were delivered in group format (58%, $n = 35$) and compared to a wait-list control group (48%, $n = 29$), followed by care as usual (28%, $n = 17$), no treatment (15%, $n = 9$), and minimal intervention (8%, $n = 5$). The

most frequently used instruments measuring physical and emotional violence were the Conflict Tactics Scale Parent-Child Version (Straus et al., 1998), the Hostility scale of the Parenting Scale (Arnold et al., 1993), and the Corporal Punishment scale of the Alabama Parenting Questionnaire (Frick, 1991). Most effect sizes were based on parent self-report (91%).

As reported in Backhaus et al., (2023), we found an overall small effect of parenting interventions for reducing physical and emotional violence (n = 56, k = 107; d = −0.37; 95% CI [–0.47, –0.27]) in a heterogeneous set of effect sizes (I^2 = 76%). Meta-regression results with all binary moderators showed no significant moderation effect (Figure 6.1). First, we found no differential effect between trials that largely included families of low-income (d = –0.36) compared to trials including mainly families of middle to high income (d = –0.56; ß = 0.13; 95% CI [–0.70, 0.96]). Second, no significant difference in effect was found between trials primarily involving low-educated families (d = –0.38) and families with middle or higher levels of education (d = –0.30; ß = –0.09; 95% CI [–0.34, 0.16]). Third, a similar lack of differential effect was observed between trials that primarily included jobless parents (d = –0.39) compared to those that largely included employed parents (d = –0.33; ß = –0.05; 95% CI [–0.37, 0.26]). Lastly there was no differential effect between trials that largely included families from an ethnic minority (d = –0.33) and trials including largely ethnic majority parents (d = –0.41; ß = 0.08; 95% CI [–0.17, 0.34]).

In short, we found no more or less effect of social learning theory-based parenting interventions to reduce physical or emotional violence for disadvantaged families.

Figure 6.1. Aggregate-level MA: Forest plot on subgroup effects to reduce violence against children

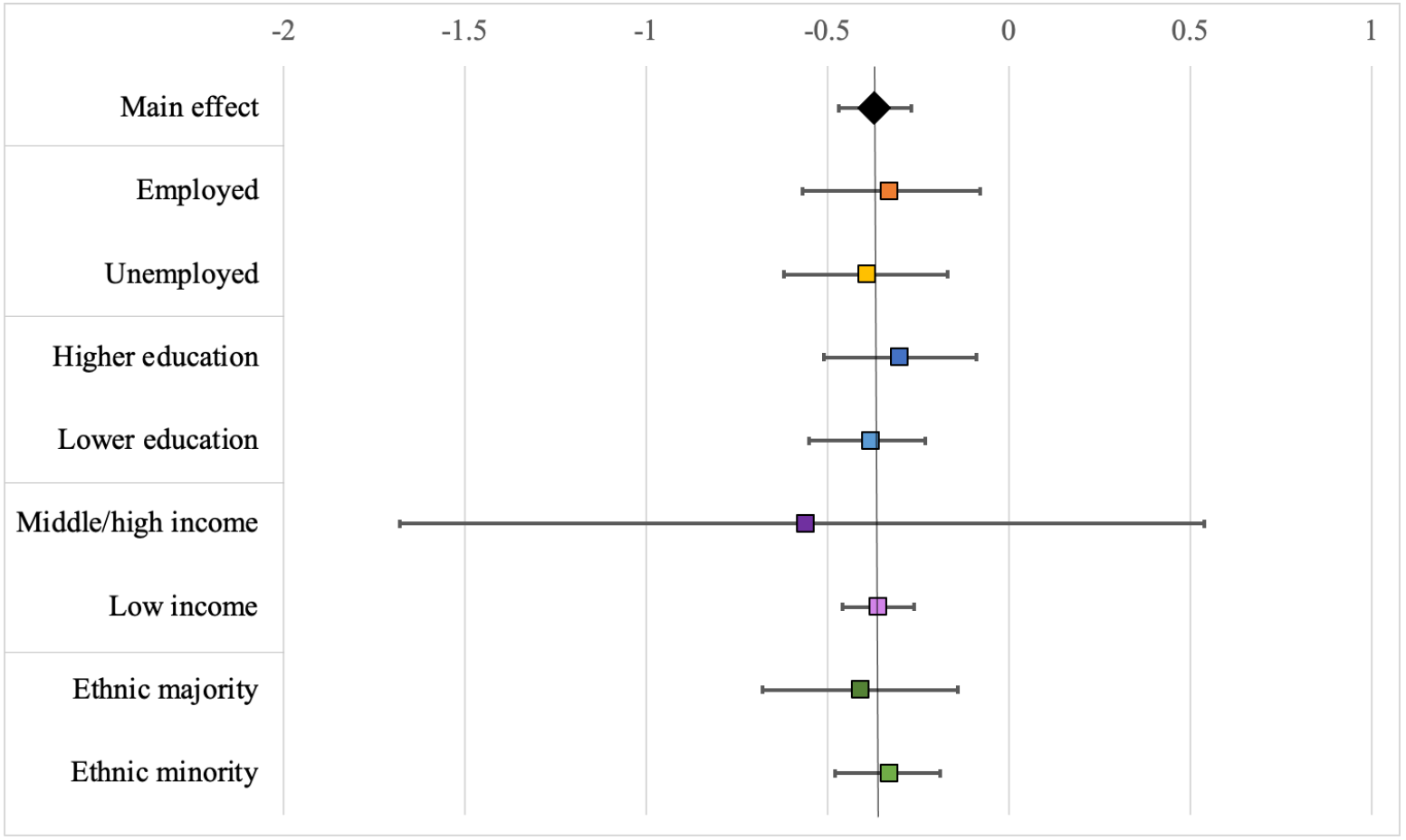


Table 6.2. Aggregate-level MA: Characteristics of studies in meta-analysis (n= 56)

	Year	Country	*N*	Intervention	Prevention level	Income	Education	Joblessness	Ethnic status
Arrubarrena	2022	Spain	146	Incredible Years	Treatment	Low	Lower		Majority
Bailey	2015	Australia	22	1-2-3 Magic Parenting Program	Universal	Middle/ High	-	Employed	-
Bradley	2003	Canada	198	1-2-3 Magic Parenting Program	Selective	–	Higher	–	–
Braet	2009	Belgium	64	Parent Management Training	Selective	Low	–	Employed	–
Breitenstein	2012	USA	24	Chicago Parent Program	Universal	Low	Higher	Employed	Minority
Breitenstein	2016	USA	79	Chicago Parent Program	Universal	Low	Higher	Unemployed	Minority
Breitenstein	2021	USA	287	Chicago Parent Program	Universal	Low	–	–	Minority
Chacko	2018b	USA	126	Fathers Supporting Success in Preschoolers	Selective	Low	Lower	–	Minority
Cheng	2004	USA	281	DARE To Be You	Universal	Low	–	–	Minority
Day	2018	Australia	183	Online Triple P	Selective	–	Higher	Employed	Majority
DeGarmo	2019	USA	426	Fathering through Change	Universal	Low	Higher	Employed	Majority
Foskolos	2014	Greece	124	Triple P	Universal	Middle/ High	Higher	Employed	–
Francis	2021	Jamaica	223	Irie Homes Toolbox	Universal	Low	Lower	–	–
Fung	2014	USA	137	Early Pathways	Selective	Low	–	Unemployed	Minority
Furlong	Un-published	Ireland	41	ChARM	Treatment	Low	Lower	Unemployed	–
Gardner	Un-published	Thailand	120	Parenting for Lifelong Health	Selective	Low	Lower	Employed	Majority
Gross	2009	USA	253	Incredible Years	Universal	Low	Higher	Employed	Minority
Guterman	2013	USA	138	Parent Aide	Indicated	Low	Lower	–	Majority

Guo	2016	China	81	Triple P	Universal	Middle/ High	Higher	Employed	–
Harris	2015	USA	199	Early Pathways	Selective	Low	–	–	Minority
Herbert	2013	USA	31	Parenting Your Hyperactive Preschooler	Selective	Middle/ High	–	–	Majority
Javier	2016	USA	28	The Filipino Family Initiative	Selective	–	Higher	–	Minority
Jouriles	2001	USA	36	Project Support	Selective	Low	Lower	Unemployed	Minority
Jouriles	2009	USA	66	Project Support	Selective	Low	Lower	Unemployed	Minority
Knox	2013	USA	149	ACT Raising Safe kids	Selective	Low	–	–	Minority
Lachman	2017	South Africa	68	Parenting for Lifelong Health	Selective	Low	Lower	Unemployed	Majority
Lachman	2021	Philippines	120	Parenting for Lifelong Health	Indicated	Low	Lower	Unemployed	–
Leijten	2017	Netherlands	154	Incredible Years	Selective	Low	Lower	–	Minority
Lessard	2016	Canada	96	Incredible Years	Selective	Middle/ High	Higher	–	–
Lester	2014	South Africa	80	Positive Parenting Skills Training Programme	Universal	Low	Lower	Unemployed	–
Leung	2015	Hong Kong	111	Parent-Child Interaction Therapy	Selective	Low	–	Unemployed	Majority
Leung	2017	Hong Kong	64	Parent-Child Interaction Therapy	Selective	Low	Higher	Unemployed	–
Menting	2014	Netherlands	133	Incredible Years	Selective	Low	Lower	–	Minority
Miller–Heyl	1998	USA	796	DARE To Be You	Selective	Low	Higher	–	Minority
Nicholson	2002	USA	26	STAR parenting programme	Indicated	Low	Lower	–	Minority
Nogueira	2021	Portugal	134	Triple P	Selective	Low	Lower	Unemployed	–
Olivares	1997	Spain	60	*Unnamed*	Universal	–	–	Employed	–
Oveisi	2010	Iran	246	SOS! Help for parents	Universal	–	–	Unemployed	–
Peterson	2002	USA	119	*Unnamed*	Indicated	Low	Lower	Unemployed	Majority

Portwood	2011	USA	271	ACT Raising Safe Kids	Universal	Low	Lower	–	Majority
Pruett	2019	USA	284	Supporting Father Involvement	Treatment	Low	–	–	Majority
Rincón	2018	Chile	332	Day by Day Program	Universal	Low	–	–	–
Self-Brown	2018	USA	99	SafeCare	Selective	Low	Lower	–	Minority
Sim	2014	Liberia	270	Parents Make the Difference	Selective	Low	Lower	Employed	Minority
Smith	2010	USA	60	Role of a Father	Selective	Low	Lower	Unemployed	Minority
Solís-Cámara	2004	Mexico	40	Programa de Crianza Estandarizado	Selective	Low	Lower	–	–
Solís-Cámara	2015	Mexico	60	Programa de Crianza Estandarizado.	Universal	Low	Lower	–	–
Sourander	2016	Finland	464	Strongest Families Smart Website	Selective	–	Higher	–	–
Spaccarelli	1992	USA	37	Incredible Years	Universal	–	Higher	–	Minority
Villodas	2021	USA	55	Parent-Child Interaction Therapy	Selective	Low	Lower	Unemployed	Minority
Ward	2020	South Africa	296	Parenting for Lifelong Health	Selective	Low	–	Unemployed	Majority
Webster-Stratton	1984	USA	25	Incredible Years	Indicated	Low	–	–	–
Webster-Stratton	1990	USA	50	Incredible Years	Selective	Low	–	–	–
Wolfe	1988	Canada	53	Parent training	Indicated	Low	–	–	–
Yao	2022	Japan	30	Behaviour parent training	Selective	Middle/ High	Higher	–	–
Zahra	2014	Iran	60	*unnamed*	Treatment	–	–	–	–

Note: Income, education, joblessness, and ethnic status were judged applying a 50% rule. For example, a trial was categorised as an ethnic minority trial if at least 50% of participants in the trial belonged to an ethnic minority group in the trial country.

Study 2: Individual participant data meta-analysis

We identified 20 eligible trials and received the individual family level data of 15 of them (75%), including in total data from 1,999 families. Thirteen trials included physical violence as an outcome and were included in the analyses (Table 6.4). All measures were parent self-report. The most frequently used instrument was the Parenting Practice Inventory (Webster-Stratton, 1998). Because not all trials followed a 1:1 randomization ratio, 1,179 families were in the intervention and 820 in the control group. Trial sample sizes ranged from 75 to 387 participants (Table 6.3). Trials included families with varying levels of disadvantage. The percentage in a trial of participants with a low income ranged from 0–93%; with lower levels of education from 11–85%, that are jobless 1–87%, and from an ethnic minority 0–75%. Risk of bias was assessed as low on most criteria.

Table 6.4. IPDMA: Demographics on moderators, outcomes, and covariates by group across trials

Variable	*N*	Trials	Participants of social disadvantage in % (*N* total) or mean (*SD*)	
			Control group	Incredible Years
Outcome				
Physical violence (post-intervention)	1,505	13	2.00 (1.43)	1.78 (1.40)
Covariate				
Physical violence (baseline)	1,886	13	1.99 (1.40)	1.98 (1.40)
Moderators				
Low income	1,504	12	58% (586)	58% (918)
Lower education	1,839	13	57% (427)	54% (587)
Joblessness	1,165	10	28% (481)	36% (684)
Ethnic minority	1,924	13	31% (789)	36% (1,133)

Table 6.3. IPDMA: Descriptives of included studies

ID	Author	Country	*N*	Level of prevention*	Setting	Child age (*M*)	Violence measure	Low income	Lower education	Jobless	Ethnic minority
1	Larsson (2009)	Norway	75	Selective	Outpatient psychiatric clinics	3–8 (6.58)	PPI	25%	11%	13%	1%
2	Seabra-Santos (2016)	Portugal	124	Selective	University clinics	3–6 (4.66)	PS; PPI	0%	20%	1%	0%
3	Menting (2014)	Netherlands	99	Selective	Community services	1–11 (6.3)	APQ	93%	45%	87%	78%
4	Leijten (2017)	Netherlands	156	Selective	Outpatient psychiatric clinics & schools	2–8 (5.59)	PPI	74%	41%	–	65%
5	Hutchings (2007)	Wales	153	Selective	Community services	3–4 (3.84)	PS	80%	47%	–	1%
6	Morpeth (2017)	England	161	Selective	Community services	2–4 (3.68)	PS	63%	44%	52%	52%
7	Scott (2010)	England	112	Selective	Schools	4–6 (5.21)	PPI; PI	44%	34%	28%	40%
8	Scott (2010)	England	174	Selective	Schools	4–6 (5.50)	PI	44%	26%	25%	75%
9	Scott (2014)	England	214	Selective	Schools	3–7 (6.07)	APQ; PI	81%	33%	29%	19%
10	Gardner (2006)	England	76	Selective	Community services	2–9 (5.93)	PS	64%	81%	61%	2%
11	Scott (2001)	England	141	Selective	Outpatient psychiatric clinics	2–10 (5.67)	PI	58%	85%	41%	15%
12	Weeland (2017)	Netherlands	387	Selective	Community services	4–8 (6.21)	PPI	–	40%	–	28%
13	Arruabarrena (2022)	Spain	111	Indicated/ Treatment	Community services	4–8 (6.60)	PPI	39%	85%	2%	37%

Note. *Level of prevention from a violence against children perspective. If for example, a trial was targeting children with behavioural problems, the trial would be coded as selective since child behaviour is a risk factor for violence.

There was a significant overall effect of Incredible Years on physical violence β = −.21, 95% CI [–.33, –.19]. The mean score in the intervention group at baseline was 1.98 (*SD* = 1.40) and at post-test 1.79 (*SD* = 1.25), and in the control group at baseline 1.99 (*SD* = 1.40) and at post-test 2.00 (*SD* = 1.43).

Three of the four moderators correlated weak to moderately (*r* = .26 to .53); the strongest correlation was between low income and joblessness. Ethnic minority status did not consistently correlate with other socio-economic status dimensions (*r* = –.12 to .09).

There was no significant moderation effect by social disadvantage of the intervention on physical violence, neither on the within-trial nor on the between-trial level (Table 6.5). Figures 6.2–5 show raw data means by trial group and social disadvantage moderator. In sum, we found no evidence for differential effectiveness of the Incredible Years programme by social disadvantage including income, employment status, education, or ethnic group affiliation.

Table 6.5. IPDMA: Moderation effects of within- and between-trial moderators

Moderator	**Families/ Trials**	**Estimated intervention effect**	**Estimated moderation effect (95% CI)**		**p value**
			Participant-level	**Trial-level**	
Income					
Low income vs. Not low income	1,015/11	–.28	−.32 (−.69, .05)	−.28 (−.86, .31)	0.35
Education					
Lower education vs. Not lower education	1,355/12	–.20	.12 (−.14, .37)	.28 (−.30, .83)	0.38
Employment					
Jobless household vs. Employed	733/9	–.16	−.23 (−.69, .23)	.53 (−.27, 1.33)	0.19
Ethnicity					
Ethnic minority vs. Ethnic majority	1,386/12	–.20	.17 (−.12, .47)	.39 (−.15, .93)	0.16

Notably, Figure 6.2 suggests that in low-income families the Incredible Years programme may buffer against an increase in violence since an increase of violence over time was only visible in the control group. However, this trend was not statistically significant.

Figure 6.2. IPDMA: Moderation of intervention effect on physical violence by low income

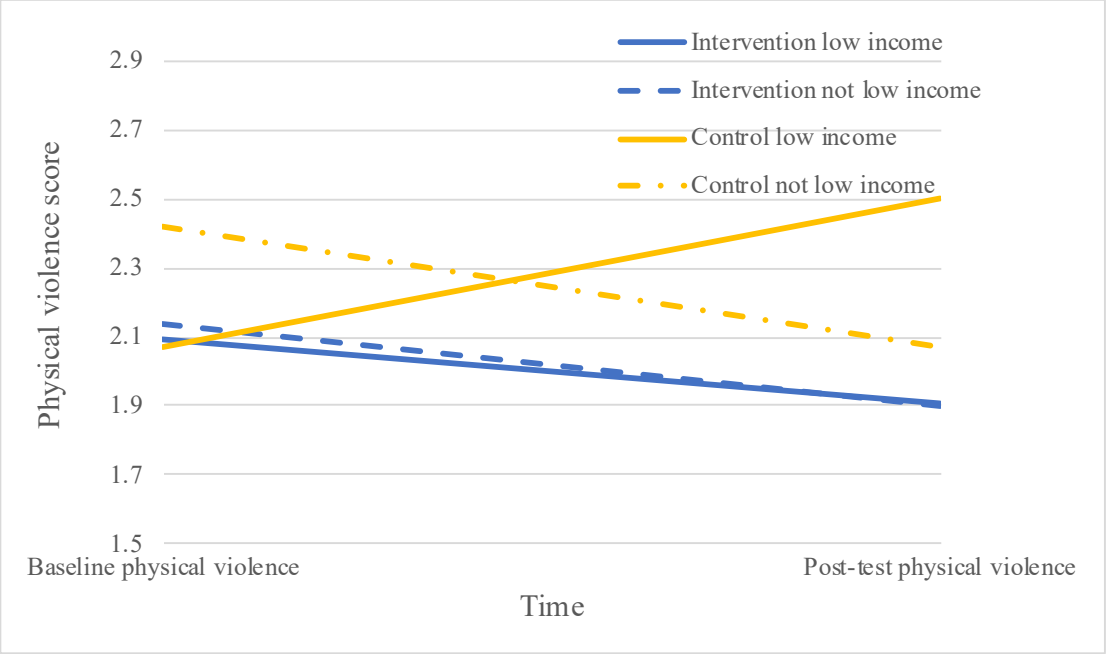


Figure 6.3. IPDMA: Moderation of intervention effect on physical violence by lower education

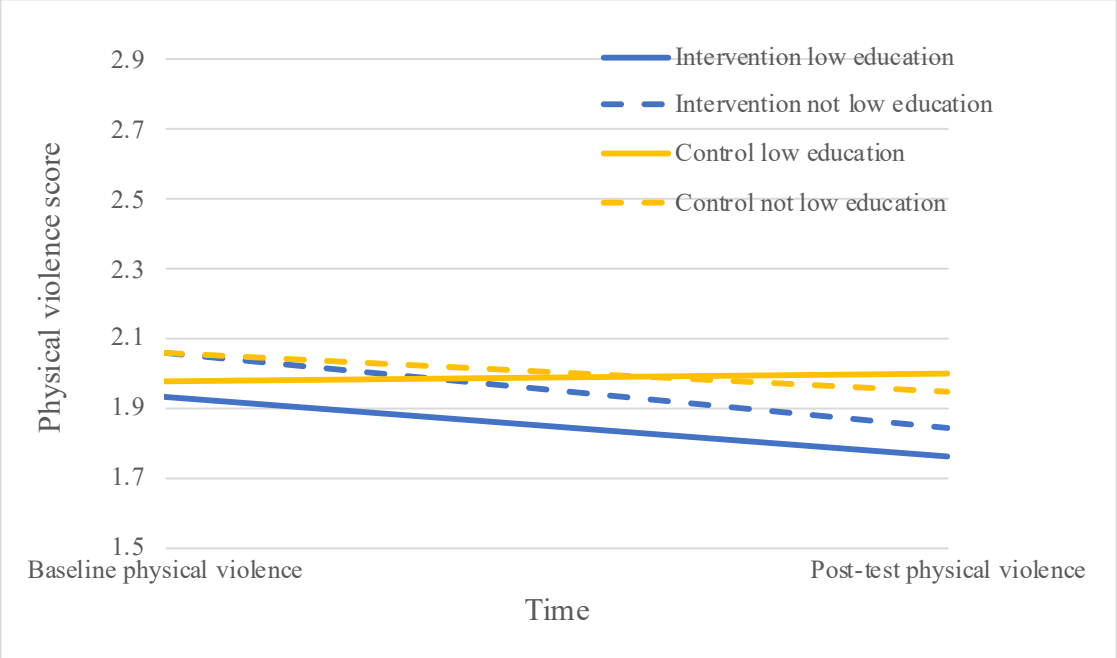


Figure 6.4. IPDMA: Moderation of intervention effect on physical violence by joblessness

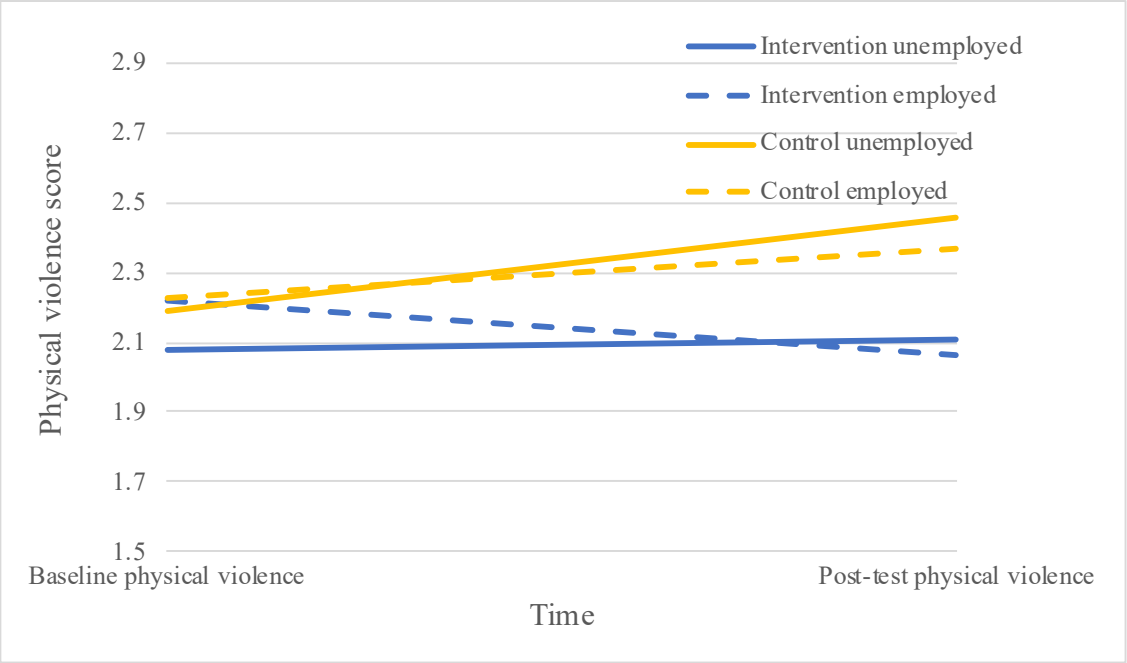
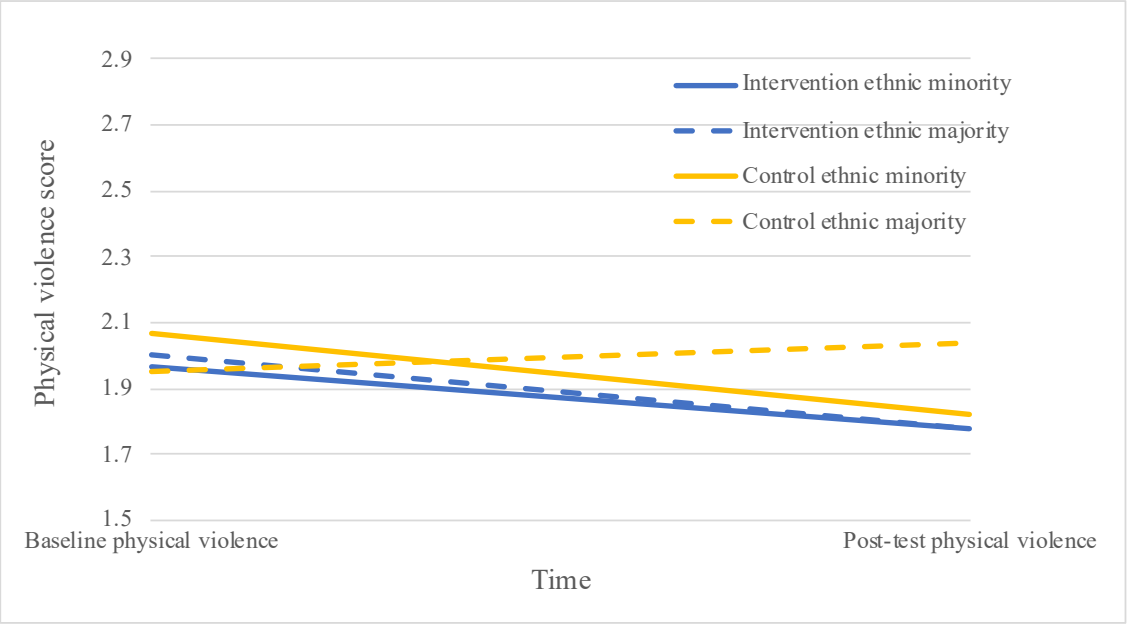


Figure 6.5. IPDMA: Moderation of intervention effect on physical violence by ethnic minority status



Discussion

We used traditional and individual participant data meta-analysis, each with unique and complementary strengths to assess whether parenting interventions are equally effective for families of varying social disadvantage in reducing violence against children. Violence against children follows a social gradient whereby children living in disadvantaged families experience more violence at home. If parenting interventions were to further widen these differences by disproportionally benefitting families of advantage, this would have strong implications for children worldwide and require corrective action given the rapid dissemination and scale up of parenting interventions across the globe.

Our analyses yielded no indication that families facing social disadvantage benefit less than advantaged families from parenting programmes in reducing physical and emotional violence. Using well-powered individual participant data meta-analysis, we showed that in trials of the European Incredible Years programme, tested across multiple countries and settings, low-income, jobless, low-educated parents, and those from an ethnic minority, reduced their violent behaviours towards their children to a similar extent as parents with more social advantage. We replicated those findings in traditional aggregate-level meta-analysis including trials of a multitude of social learning theory-based parenting programmes from across the globe, using robust variance estimation meta-analysis.

Our findings suggest that families, clinicians, and policymakers can be reassured that parenting interventions are equally likely to be effective across parent populations of varying social disadvantage. These findings are potentially generalisable to a multitude of contexts, given that studies came from a wide range of service settings, such as community, clinical and educational, albeit most trials were from high-income countries. However, the potential generalisability of some of the moderator findings is supported by a recent review of 131 parenting intervention trials in low- and middle-income countries which found no differential

effects by poverty, or parent education in reducing child maltreatment (Backhaus, Gardner et al., 2023).

We included multiple indicators of equity, but only in terms of programme effects and once parents had access to programmes. However, access to and engagement with a parenting intervention might be another source of inequality. Various reviews have examined barriers of access to parenting interventions (Axford et al., 2012; Butler et al., 2020; Duppong-Hurley et al., 2016), however, a systematic evidence synthesis focusing on social disadvantage as a moderator for access is lacking (Weisenmuller & Hilton, 2021). Nevertheless, multiple barriers to access and engagement identified in previous studies may be particularly present in families facing social disadvantage, such as time demands due to additional services or multiple jobs (Axford et al., 2012; Duppong-Hurley et al., 2016), transportation (Axford et al., 2012), financial pressures (Butler et al., 2020), and stress (Ortiz & Del Vecchio, 2013). In fact, a previous analysis of the IPD dataset found that low socio-economic status families had reduced attendance rates in the Incredible Years programme (Berry et al., 2022). While studies included in the aggregate-level meta-analysis were successful in including families from varying levels of social disadvantage, and trials from the IPDMA were largely delivered in non-affluent areas and free of charge, future research should focus on access and engagement barriers for social disadvantaged groups, particularly, in the scale-up of programmes. When implementing parenting interventions on a large scale at the local and national level, it is crucial to collect routine monitoring data that segregates recipient data to understand whether all families who need parenting support have equal access to parenting interventions.

We examined socio-economic factors and ethnicity as moderators. Although the knowledge about the absence of moderation in these equity domains is crucial, desired, and timely, we were not able to explain the heterogeneity in programme effects within and across

trials. It remains unclear which additional characteristics related to family, delivery, or context may moderate the effects of parenting interventions. Previous aggregate-level meta-analyses were unable to establish a coherent set of moderators due to mixed findings between reviews (Casillas et al., 2016; Chen & Chan, 2016; Euser et al., 2015; Lundahl et al., 2006; van der Put et al., 2018). These reviews highlight the complexity in the effectiveness of parenting interventions which could be further analysed by using logic models and programme theory that move from *if* there is a moderation effect to *why* there might be a moderation effect (Anderson et al., 2011; Maden et al., 2017). Consequently, using additional methods to unpack moderation pathways is warranted, such as including qualitative designs.

The presented studies have several strengths. First, we increased confidence in the findings by replicating findings from our large individual participant data analysis in an aggregate-level meta-analysis with a wider range of interventions, countries, and contexts. Second, the robustness of our findings is increased by our methodological and analytical strategies: we searched more than 26 databases, including five non-English ones, included only randomised trials and only a homogeneous yet common set of parenting interventions, and applied multi-level modelling and robust variance estimation meta-analysis, the current gold standard of meta-analytic methods.

It is important to consider several limitations. First, we only included social learning theory-based programmes. By selecting these most common and well-established parenting interventions, we were able to decrease heterogeneity between trials, but this decision limits our generalisability to this type of parenting intervention. Second, because studies used different instruments with heterogeneous sets of items, we could not analyse differential effects by individual violent behaviours (e.g., spanking vs. slapping). This knowledge is important since total scores may conceal potential effects on individual behaviours, and their interactions. For example, it may be that these programmes equally reduce spanking,

however, may fail to reduce e.g., yelling at a child in some families. Third, our outcome data is largely based on parent self-report (IPD analysis 100%; aggregate-level analysis 91%). Self-reporting of violence may provide a more accurate estimation than official reports but is at risk for social desirability bias. This is particularly relevant in social intervention trials, as it is not feasible to blind participants. However, a previous parenting intervention review and aggregate-level meta-analysis compared effects sizes of parent and child outcomes by assessment method. They found higher effect sizes for observation compared to parent self-report (Beelmann et al., 2022), suggesting that parent report is not inflating effect sizes of parenting interventions. Fourth, despite an attempt to include parenting intervention trials from a range of context and countries, most trials eligible for these reviews were from high-income countries (78%). Fifth, we were unable to separate moderation effects by time of assessment due to only a small minority of studies (20%) providing effects beyond one year follow-up.

Despite these limitations, our study is a response to a timely call by policymakers that prepare national scale-up of parenting interventions by examining whether these interventions could inadvertently exacerbate social inequality in the reduction of violence against children. With global policy interest and scale up of interventions, research is urgently needed to identify which factors may impact programme effectiveness and whether those parents most in need have access to parenting interventions.

References

* = Studies included in aggregate-level meta-analysis (Study 1)

+ = Studies included in individual participant level meta-analysis (Study 2)

Anderson, L. M., Petticrew, M., Rehfuess, E., Armstrong, R., Ueffing, E., Baker, P., . . . Tugwell, P. (2011). Using logic models to capture complexity in systematic reviews. *Research Synthesis Methods*, *2*(1), 33-42. https://doi.org/10.1002/jrsm.32

Arnold, D. S., O'leary, S. G., Wolff, L. S., & Acker, M. M. (1993). The Parenting Scale: A measure of dysfunctional parenting in discipline situations. *Psychological Assessment*, *5*(2), 137-144. https://doi.org/10.1037/1040-3590.5.2.137

*+ Arruabarrena, I., Rivas, G. R., Cañas, M., & De Paúl, J. (2022). The incredible years parenting and child treatment programs: a randomized controlled trial in a child welfare setting in Spain. *Psychosocial Intervention*, *31*(1), 43-58. https://doi.org/10.7440/res64.2018.03

Axford, N., Lehtonen, M., Kaoukji, D., Tobin, K., & Berry, V. (2012). Engaging parents in parenting programs: Lessons from research and practice. *Children and Youth Services Review*, *34*(10), 2061-2071. https://doi.org/10.1016/j.childyouth.2012.06.011

Backhaus, S., Gardner, F., Schafer, M., Melendez-Torres, G. J., Knerr, W., & Lachman, J. M. (2023). *World Health Organization Guidelines on Parenting Interventions to Prevent Maltreatment and Enhance Parent–Child Relationships with Children aged 0-17 Years: Report of the Systematic Reviews of Evidence*. https://cdn.who.int/media/docs/default-source/documents/violence-prevention/systematic_reviews-for-the-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=158fd424_3

Backhaus, S., Leijten, P., Jochim, J., Melendez-Torres, G., & Gardner, F. (2023). Effects over time of parenting interventions to reduce physical and emotional violence against

children: a systematic review and meta-analysis. *eClinicalMedicine*, *60*(102003). https://doi.org/10.1016/j.eclinm.2023.102003

Backhaus, S., Leijten, P., Meinck, F., & Gardner, F. (2022). Different instruments, same content? A systematic comparison of child maltreatment and harsh parenting instruments. *Trauma, Violence, & Abuse*, 15248380221134290. https://doi.org/10.1177/15248380221134290

* Bailey, E. L., Van Der Zwan, R., Phelan, T. W., & Brooks, A. (2015). Keeping it going: evidence of long-term improvements after implementation of the 1-2-3 magic parenting program. *Child & Family Behavior Therapy*, *37*(4), 303-320. https://doi.org/10.1080/07317107.2015.1104776

Bandura, A. (1977). *Social learning theory* (Vol. 1). Prentice-hall.

Beelmann, A., Arnold, L. S., & Hercher, J. (2022). Parent training programs for preventing and treating antisocial behavior in children and adolescents: A comprehensive meta-analysis of international studies. *Aggression and Violent behavior*, 101798. https://doi.org/10.1016/j.avb.2022.101798

Berlin, J. A., Santanna, J., Schmid, C. H., Szczech, L. A., & Feldman, H. I. (2002). Individual patient-versus group-level data meta-regressions for the investigation of treatment effect modifiers: ecological bias rears its ugly head. *Statistics in medicine*, *21*(3), 371-387. https://doi.org/10.1002/sim.1023

Berry, V., Melendez-Torres, G. J., Axford, N., Axberg, U., de Castro, B. O., Gardner, F., . . . Leijten, P. (2022). Does Social and Economic Disadvantage Predict Lower Engagement with Parenting Interventions? An Integrative Analysis Using Individual Participant Data. *Prevention Science*. https://doi.org/10.1007/s11121-022-01404-1

Bloom, H. S., & Michalopoulos, C. (2013). When is the Story in the Subgroups? *Prevention Science*, *14*(2), 179-188. https://doi.org/10.1007/s11121-010-0198-x

* Bradley, S. J., Jadaa, D.-A., Brody, J., Landy, S., Tallett, S. E., Watson, W., . . . Stephens, D. (2003). Brief psychoeducational parenting program: An evaluation and 1-year follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(10), 1171-1178. https://doi.org/10.1097/00004583-200310000-00007

* Braet, C., Meerschaert, T., Merlevede, E., Bosmans, G., Van Leeuwen, K., & De Mey, W. (2009). Prevention of antisocial behaviour: Evaluation of an early intervention programme. *European Journal of Developmental Psychology*, *6*(2), 223-240. https://doi.org/10.1080/17405620601033194

* Breitenstein, S. M., Fehrenbacher, C., Holod, A. F., & Schoeny, M. E. (2021). A randomized trial of digitally delivered, self-administered parent training in primary care: effects on parenting and child behavior. *The Journal of Pediatrics*, *231*, 207-214. https://doi.org/10.1016/j.jpeds.2020.12.016

* Breitenstein, S. M., Fogg, L., Ocampo, E. V., Acosta, D. I., & Gross, D. (2016). Parent Use and Efficacy of a Self-Administered, Tablet-Based Parent Training Intervention: A Randomized Controlled Trial. *JMIR mHealth uHealth*, *4*(2), e36. https://doi.org/10.2196/mhealth.5202

* Breitenstein, S. M., Gross, D., Fogg, L., Ridge, A., Garvey, C., Julion, W., & Tucker, S. (2012). The Chicago Parent Program: Comparing 1-year outcomes for African American and Latino parents of young children. *Research in Nursing & Health*, *35*(5), 475-489. https://doi.org/10.1002/nur.21489

Brown, C. H., Sloboda, Z., Faggiano, F., Teasdale, B., Keller, F., Burkhart, G., . . . Prevention Science Methodology Group. (2013). Methods for synthesizing findings on moderation effects across multiple randomized trials. *Prevention Science*, *14*(2), 144-156. https://doi.org/10.1007/s11121-011-0207-8

Butler, J., Gregg, L., Calam, R., & Wittkowski, A. (2020). Parents' perceptions and experiences of parenting programmes: A systematic review and metasynthesis of the qualitative literature. *Clinical child and family psychology review*, *23*, 176-204.

Carr, A., Duff, H., & Craddock, F. (2020). A Systematic Review of Reviews of the Outcome of Noninstitutional Child Maltreatment. *Trauma, Violence, & Abuse*, *21*(4), 828-843. https://doi.org/10.1177/1524838018801334

Casillas, K. L., Fauchier, A., Derkash, B. T., & Garrido, E. F. (2016). Implementation of evidence-based home visiting programs aimed at reducing child maltreatment: A meta-analytic review. *Child Abuse & Neglect*, *53*, 64-80. https://doi.org/10.1016/j.chiabu.2015.10.009

Cerna-Turoff, I., Fang, Z., Meierkord, A., Wu, Z., Yanguela, J., Bangirana, C. A., & Meinck, F. (2021). Factors Associated With Violence Against Children in Low- and Middle-Income Countries: A Systematic Review and Meta-Regression of Nationally Representative Data. *Trauma, Violence, & Abuse*, *22*(2), 219-232. https://doi.org/10.1177/1524838020985532

* Chacko, A., Fabiano, G. A., Doctoroff, G. L., & Fortson, B. (2018). Engaging Fathers in Effective Parenting for Preschool Children Using Shared Book Reading: A Randomized Controlled Trial. *Journal of Clinical Child & Adolescent Psychology*, *47*(1), 79-93. https://doi.org/10.1080/15374416.2016.1266648

Chen, M., & Chan, K. L. (2016). Effects of Parenting Programs on Child Maltreatment Prevention: A Meta-Analysis. *Trauma, Violence, & Abuse*, *17*(1), 88-104. https://doi.org/10.1177/1524838014566718

* Cheng, S. H. (2004). *Factors that influence the effectiveness of a parenting program for Asians and Pacific Islanders*. (Doctoral dissertation).

https://www.proquest.com/docview/305138483?pq-origsite=gscholar&fromopenview=true

Coulton, C. J., Crampton, D. S., Irwin, M., Spilsbury, J. C., & Korbin, J. E. (2007). How neighborhoods influence child maltreatment: A review of the literature and alternative pathways. *Child Abuse & Neglect*, *31*(11-12), 1117-1142. https://doi.org/10.1016/j.chiabu.2007.03.023

Cuartas, J., McCoy, D. C., Rey-Guerra, C., Britto, P. R., Beatriz, E., & Salhi, C. (2019). Early childhood exposure to non-violent discipline and physical and psychological aggression in low- and middle-income countries: National, regional, and global prevalence estimates. *Child Abuse & Neglect*, *92*, 93-105. https://doi.org/10.1016/j.chiabu.2019.03.021

Currie, J., & Spatz Widom, C. (2010). Long-Term Consequences of Child Abuse and Neglect on Adult Economic Well-Being. *Child Maltreatment*, *15*(2), 111-120. https://doi.org/10.1177/1077559509355316

* Day, J. J., & Sanders, M. R. (2018). Do Parents Benefit From Help When Completing a Self-Guided Parenting Program Online? A Randomized Controlled Trial Comparing Triple P Online With and Without Telephone Support. *Behavior Therapy*, *49*(6), 1020-1038. https://doi.org/10.1016/j.beth.2018.03.002

* DeGarmo, D. S., & Jones, J. A. (2019). Fathering Through Change (FTC) intervention for single fathers: Preventing coercive parenting and child problem behaviors. *Development and Psychopathology*, *31*(5), 1801-1811. https://doi.org/10.1017/S0954579419001019

Duppong-Hurley, K., Hoffman, S., Barnes, B., & Oats, R. (2016). Perspectives on Engagement Barriers and Alternative Delivery Formats from Non-completers of a

Community-Run Parenting Program. *Journal of Child and Family Studies*, *25*(2), 545-552. https://doi.org/10.1007/s10826-015-0253-0

Euser, S., Alink, L. R., Stoltenborgh, M., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2015). A gloomy picture: a meta-analysis of randomized controlled trials reveals disappointing effectiveness of programs aiming at preventing child maltreatment. *BMC Public Health*, *15*(1), 1068.

Fisher, D. J., Carpenter, J. R., Morris, T. P., Freeman, S. C., & Tierney, J. F. (2017). Meta-analytical methods to identify who benefits most from treatments: daft, deluded, or deft approach? *BMJ*, *356*, j573. https://doi.org/10.1136/bmj.j573

* Foskolos, K. (2015). *The acceptability and efficacy of a brief universal preventive parenting intervention for child behavioural and emotional disorders* (Doctoral dissertation). https://ora.ox.ac.uk/objects/uuid:cb6b28fb-12ad-4e81-b6d3-2134f7dfaec8

* Francis, T., & Baker-Henningham, H. (2021). The Irie Homes Toolbox: A cluster randomized controlled trial of an early childhood parenting program to prevent violence against children in Jamaica. *Children and Youth Services Review*, *126*, 106060. https://doi.org/10.1016/j.childyouth.2021.106060

Frick, P. J. (1991). The Alabama parenting questionnaire. *Unpublished rating scale, University of Alabama*.

* Fung, M. P., & Fox, R. A. (2014). The culturally-adapted Early Pathways program for young Latino children in poverty: A randomized controlled trial. *Journal of Latina/o Psychology*, *2*(3), 131-145. https://doi.org/10.1037/LAT0000019

* Furlong, M., Stokes, A., McGilloway, S., Hickey, G., Leckey, Y., Bywater, T., & Team, E. R. (unpublished). Examining the effectiveness of a wraparound-inspired intervention

for parents with children at risk of child maltreatment: Outcomes from a multi-centre exploratory randomised controlled trial.

+ Gardner, F., Burton, J., & Klimes, I. (2006). Randomised controlled trial of a parenting intervention in the voluntary sector for reducing child conduct problems: outcomes and mechanisms of change. *Journal of Child Psychology and Psychiatry*, *47*(11), 1123-1132. https://doi.org/10.1111/j.1469-7610.2006.01668.x

Gardner, F., Leijten, P., Harris, V., Mann, J., Hutchings, J., Beecham, J., . . . Landau, S. (2019). Equity effects of parenting interventions for child conduct problems: a pan-European individual participant data meta-analysis. *The Lancet Psychiatry*, *6*(6), 518-527. https://doi.org/10.1016/S2215-0366(19)30162-2

* Gardner, F., McCoy, A., Lachman, L. M., Melendez-Torres, G. J., Tapanya, S., & Loupha, S. (unpublished). Randomised trial of a parenting intervention in the Thai public health system for reducing violence against children.

Grogan-Kaylor, A., & Otis, M. D. (2007). The predictors of parental use of corporal punishment. *Family Relations*, *56*(1), 80-91. https://doi.org/10.1111/j.1741-3729.2007.00441.x

* Gross, D., Garvey, C., Julion, W., Fogg, L., Tucker, S., & Mokros, H. (2009). Efficacy of the Chicago Parent Program with Low-Income African American and Latino Parents of Young Children. *Prevention Science*, *10*(1), 54-65. https://doi.org/10.1007/s11121-008-0116-7

* Guo, M., Morawska, A., & Sanders, M. R. (2016). A Randomized Controlled Trial of Group Triple P With Chinese Parents in Mainland China. *Behavior Modification*, *40*(6), 825-851. https://doi.org/10.1177/0145445516644221

* Guterman, N. B., Tabone, J. K., Bryan, G. M., Taylor, C. A., Napoleon-Hanger, C., & Banman, A. (2013). Examining the effectiveness of home-based parent aide services

to reduce risk for physical child abuse and neglect: Six-month findings from a randomized clinical trial. *Child Abuse & Neglect*, *37*(8), 566-577. https://doi.org/10.1016/j.chiabu.2013.03.006

* Harris, S. E., Fox, R. A., & Love, J. R. (2015). Early Pathways Therapy for Young Children in Poverty. *Counseling Outcome Research and Evaluation*, *6*(1), 3-17. https://doi.org/10.1177/2150137815573628

* Herbert, S. D. (2013). *Parent training for families of hyperactive preschool-aged children*. (Doctoral dissertation). https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1805&context=open_access_dissertations

Higgins, J. P., Altman, D. G., Gøtzsche, P. C., Jüni, P., Moher, D., Oxman, A. D., . . . Sterne, J. A. (2011). The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. *BMJ*, *343*, d5928. https://doi.org/10.1136/bmj.d5928

Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2019). *Cochrane handbook for systematic reviews of interventions* (2 ed.). John Wiley & Sons.

Hunter, A. A., & Flores, G. (2021). Social determinants of health and child maltreatment: a systematic review. *Pediatric Research*, *89*(2), 269-274. https://doi.org/10.1038/s41390-020-01175-x

+ Hutchings, J., Bywater, T., Daley, D., Gardner, F., Whitaker, C., Jones, K., . . . Edwards, R. T. (2007). Parenting intervention in Sure Start services for children at risk of developing conduct disorder: pragmatic randomised controlled trial. *BMJ*, *334*(678). https://doi.org/10.1136/bmj.39126.620799.55

* Javier, J. R., Coffey, D. M., Schrager, S. M., Palinkas, L. A., & Miranda, J. (2016). Parenting intervention for prevention of behavioral problems in elementary school-

age Filipino-American children: A pilot study in churches. *Journal of Developmental & Behavioral Pediatrics*, *37*(9), 737-745. https://doi.org/10.1097/DBP.0000000000000342

* Jouriles, E. N., McDonald, R., Rosenfield, D., Stephens, N., Corbitt-Shindler, D., & Miller, P. C. (2009). Reducing conduct problems among children exposed to intimate partner violence: a randomized clinical trial examining effects of Project Support. *Journal of Consulting & Clinical Psychology*, *77*(4), 705-717. https://doi.org/10.1037/a0015994

* Jouriles, E. N., McDonald, R., Spiller, L., Norwood, W. D., Swank, P. R., Stephens, N., . . . Buzy, W. M. (2001). Reducing conduct problems among children of battered women. *Journal of Consulting & Clinical Psychology*, *69*(5), 774-785. https://doi.org/10.1037/0022-006X.69.5.774

Judd, N., Hughes, K., Bellis, M. A., Hardcastle, K., & Amos, R. (2023). Is parental unemployment associated with increased risk of adverse childhood experiences? A systematic review and meta-analysis. *Journal of Public Health*, fdad069. https://doi.org/10.1093/pubmed/fdad069

Jull, J., Whitehead, M., Petticrew, M., Kristjansson, E., Gough, D., Petkovic, J., . . . Edwards, S. (2017). When is a randomised controlled trial health equity relevant? Development and validation of a conceptual framework. *BMJ Open*, *7*(9), e015815. https://doi.org/10.1136/bmjopen-2016-015815

Kaehler, L. A., Jacobs, M., & Jones, D. J. (2016). Distilling common history and practice elements to inform dissemination: Hanf-model BPT programs as an example. *Clinical Child and Family Psychology Review*, *19*(3), 236-258. https://doi.org/10.1007/s10567-016-0210-5

Kim, H., & Drake, B. (2018). Child maltreatment risk as a function of poverty and race/ethnicity in the USA. *International Journal of Epidemiology*, *47*(3), 780-787. https://doi.org/10.1093/ije/dyx280

* Knox, M., Burkhart, K., & Cromly, A. (2013). Supporting positive parenting in community health centers: the ACT Raising Safe Kids Program. *Journal of Community Psychology*, *41*(4), 395-407. https://doi.org/10.1002/jcop.21543

* Lachman, J. M., Alampay, L. P., Jocson, R. M., Alinea, C., Madrid, B., Ward, C., . . . Gardner, F. (2021). Effectiveness of a parenting programme to reduce violence in a cash transfer system in the Philippines: RCT with follow-up. *The Lancet Regional Health - Western Pacific*, *17*, 100279. https://doi.org/10.1016/j.lanwpc.2021.100279

* Lachman, J. M., Cluver, L., Ward, C. L., Hutchings, J., Mlotshwa, S., Wessels, I., & Gardner, F. (2017). Randomized controlled trial of a parenting program to reduce the risk of child maltreatment in South Africa. *Child Abuse & Neglect*, *72*, 338-351. https://doi.org/10.1016/j.chiabu.2017.08.014

+ Larsson, B., Fossum, S., Clifford, G., Drugli, M. B., Handegård, B. H., & Mørch, W.-T. (2009). Treatment of oppositional defiant and conduct problems in young Norwegian children: results of a randomized controlled trial. *European Child & Adolescent Psychiatry*, *18*, 42-52. https://doi.org/10.1007/s00787-008-0702-z

Leijten, P., Gardner, F., Landau, S., Harris, V., Mann, J., Hutchings, J., . . . Scott, S. (2018). Research Review: Harnessing the power of individual participant data in a meta-analysis of the benefits and harms of the Incredible Years parenting program. *Journal of child psychology and psychiatry*, *59*(2), 99-109.

Leijten, P., Gardner, F., Melendez-Torres, G. J., van Aar, J., Hutchings, J., Schulz, S., . . . Overbeek, G. (2019). Meta-Analyses: Key Parenting Program Components for

Disruptive Child Behavior. *Journal of the American Academy of Child & Adolescent Psychiatry*, *58*(2), 180-190. https://doi.org/10.1016/j.jaac.2018.07.900

Leijten, P., Melendez-Torres, G. J., Knerr, W., & Gardner, F. (2016). Transported versus homegrown parenting interventions for reducing disruptive child behavior: A multilevel meta-regression study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *55*(7), 610-617. https://doi.org/10.1016/j.jaac.2016.05.003

Leijten, P., Raaijmakers, M., Wijngaards, L., Matthys, W., Menting, A., Hemink-van Putten, M., & Orobio de Castro, B. (2018). Understanding Who Benefits from Parenting Interventions for Children's Conduct Problems: an Integrative Data Analysis. *Prevention Science*, *19*(4), 579-588. https://doi.org/10.1007/s11121-018-0864-y

* + Leijten, P., Raaijmakers, M. A., Orobio de Castro, B., van den Ban, E., & Matthys, W. (2017). Effectiveness of the incredible years parenting program for families with socioeconomically disadvantaged and ethnic minority backgrounds. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 59-73.

Leijten, P., Raaijmakers, M. A. J., Orobio de Castro, B., van den Ban, E., & Matthys, W. (2017). Effectiveness of the Incredible Years parenting program for families with socioeconomically disadvantaged and ethnic minority backgrounds. *Journal of Clinical Child & Adolescent Psychology*, *46*(1), 59-73. https://doi.org/10.1080/15374416.2015.1038823

* Lessard, J., Normandeau, S., & Robaey, P. (2016). Effects of the Incredible Years Program in Families of Children with ADHD. *Journal of Child and Family Studies*, *25*(12), 3716-3727. https://doi.org/10.1007/s10826-016-0509-3

* Lester, S. N. (2015). *Evaluation of the Parent Centre's positive parenting skills training programme: a randomised controlled trial* (Doctoral dissertation). https://open.uct.ac.za/handle/11427/15615

* Leung, C., Tsang, S., Ng, G. S. H., & Choi, S. Y. (2017). Efficacy of Parent–Child Interaction Therapy With Chinese ADHD Children: Randomized Controlled Trial. *Research on Social Work Practice*, *27*(1), 36-47. https://doi.org/10.1177/1049731516643837

* Leung, C., Tsang, S., Sin, T. C. S., & Choi, S.-y. (2015). The Efficacy of Parent–Child Interaction Therapy With Chinese Families: Randomized Controlled Trial. *Research on Social Work Practice*, *25*(1), 117-128. https://doi.org/10.1177/1049731513519827

Lipsey, M. W. (2003). Those confounded moderators in meta-analysis: Good, bad, and ugly. *The Annals of the American Academy of Political and Social Science*, *587*(1), 69-81. https://doi.org/10.1177/0002716202250791

Lorenc, T., Petticrew, M., Welch, V., & Tugwell, P. (2013). What types of interventions generate inequalities? Evidence from systematic reviews. *Journal of Epidemiology and Community Health*, *67*(2), 190-193. https://doi.org/10.1136/ jech-2012-201257

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: moderators and follow-up effects. *Clinical Psychology Review*, *26*(1), 86-104. https://doi.org/10.1016/j.cpr.2005.07.004

Maden, M., Cunliffe, A., McMahon, N., Booth, A., Carey, G. M., Paisley, S., . . . Gabbay, M. (2017). Use of programme theory to understand the differential effects of interventions across socio-economic groups in systematic reviews-a systematic methodology review. *Systematic reviews*, *6*(1), 266-266. https://doi.org/10.1186/s13643-017-0638-9

* + Menting, A. T. A., de Castro, B. O., Wijngaards-de Meij, L. D. N. V., & Matthys, W. (2014). A Trial of Parent Training for Mothers Being Released From Incarceration and Their Children. *Journal of Clinical Child & Adolescent Psychology*, *43*(3), 381-396. https://doi.org/10.1080/15374416.2013.817310

* Miller-Heyl, J., MacPhee, D., & Fritz, J. J. (1998). DARE to be You: A Family-Support, Early Prevention Program. *Journal of Primary Prevention*, *18*(3), 257-285. https://doi.org/10.1023/A:1024602927381

+ Morpeth, L., Blower, S., Tobin, K., Taylor, R. S., Bywater, T., Edwards, R. T., . . . Berry, V. (2017). The effectiveness of the Incredible Years pre-school parenting programme in the United Kingdom: a pragmatic randomised controlled trial. *Child Care in Practice*, *23*(2), 141-161. https://doi.org/10.1080/13575279.2016.1264366

Myers, H. F. (2009). Ethnicity- and socio-economic status-related stresses in context: an integrative review and conceptual model. *Journal of Behavioral Medicine*, *32*(1), 9-19. https://doi.org/10.1007/s10865-008-9181-4

* Nicholson, B., Anderson, M., Fox, R., & Brenner, V. (2002). One Family at a Time: A Prevention Program for At-Risk Parents. *Journal of Counseling & Development*, *80*(3), 362-371. https://doi.org/10.1002/j.1556-6678.2002.tb00201.x

* Nogueira, S., Abreu-Lima, I., Canário, C., & Cruz, O. (2021). Group Triple P – A randomized controlled trial with low-income mothers. *Children and Youth Services Review*, *121*, 105862. https://doi.org/10.1016/j.childyouth.2020.105862

* Olivares, J., Rosa, A. I., & López, L. J. G. (1997). El papel del vídeo en el entrenamiento a madres: un estudio comparativo [The role of video in training mothers]. *Psicologia Conductual*, *5*(2), 237-254.

Ortiz, C., & Del Vecchio, T. (2013). Cultural Diversity: Do We Need a New Wake-Up Call for Parent Training? *Behavior Therapy*, *44*(3), 443-458. https://doi.org/10.1016/j.beth.2013.03.009

* Oveisi, S., Ardabili, H. E., Dadds, M. R., Majdzadeh, R., Mohammadkhani, P., Rad, J. A., & Shahrivar, Z. (2010). Primary prevention of parent-child conflict and abuse in

Iranian mothers: A randomized-controlled trial. *Child Abuse & Neglect*, *34*(3), 206-213. https://doi.org/10.1016/j.chiabu.2009.05.008

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., . . . Brennan, S. E. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery*, *88*, 105906. https://doi.org/10.1016/j.ijsu.2021.105906

Patterson, G. R. (1982). *Coercive family process* (Vol. 3). Castalia Publishing Company.

* Peterson, L., Tremblay, G., Ewigman, B., & Popkey, C. (2002). The parental daily diary: a sensitive measure of the process of change in a child maltreatment prevention program. *Behavior Modification*, *26*(5), 627-647. https://doi.org/10.1177/014544502236654

* Portwood, S. G., Lambert, R. G., Abrams, L. P., & Nelson, E. B. (2011). An Evaluation of the Adults and Children Together (ACT) Against Violence Parents Raising Safe Kids Program. *The Journal of Primary Prevention*, *32*(3), 147-160. https://doi.org/10.1007/s10935-011-0249-5

* Pruett, M. K., Cowan, P. A., Cowan, C. P., Gillette, P., & Pruett, K. D. (2019). Supporting Father Involvement: An Intervention With Community and Child Welfare–Referred Couples. *Family Relations*, *68*(1), 51-67. https://doi.org/10.1111/fare.12352

* Rincón, P., Cova, F., Saldivia, S., Bustos, C., Grandón, P., Inostroza, C., . . . King, M. (2018). Effectiveness of a positive parental practices training program for Chilean preschoolers' families: a randomized controlled trial. *Frontiers in Psychology*, *9*, 1751. https://doi.org/10.3389/fpsyg.2018.01751

+ Scott, S., O'Connor, T. G., Futh, A., Matias, C., Price, J., & Doolan, M. (2010a). Impact of a parenting program in a high-risk, multi-ethnic community: The PALS trial. *Journal of child psychology and psychiatry*, *51*(12), 1331-1341.

+ Scott, S., Sylva, K., Doolan, M., Price, J., Jacobs, B., Crook, C., & Landau, S. (2010b). Randomised controlled trial of parent groups for child antisocial behaviour targeting multiple risk factors: the SPOKES project. *Journal of Child Psychology & Psychiatry*, *51*(1), 48-57. https://doi.org/10.1111/j.1469-7610.2009.02127.x

+ Scott, S., Sylva, K., Kallitsoglou, A., & Ford, T. (2014). Which type of parenting programme best improves child behaviour and reading. *Follow-up of the helping children achieve trial. London: Nuffield Foundation*.

+ Scott, S., Webster-Stratton, C., Spender, Q., Doolan, M., Jacobs, B., & Aspland, H. (2001). Multicentre controlled trial of parenting groups for childhood antisocial behaviour in clinical practiceCommentary: nipping conduct problems in the bud. *BMJ*, *323*(7306), 194. https://doi.org/10.1136/bmj.323.7306.194

+ Seabra-Santos, M. J., Gaspar, M. F., Azevedo, A. F., Homem, T. C., Guerra, J., Martins, V., . . . Moura-Ramos, M. (2016). Incredible Years parent training: What changes, for whom, how, for how long? *Journal of Applied Developmental Psychology*, *44*, 93-104. https://doi.org/10.1016/j.appdev.2016.04.004

* Self-Brown, S., Osborne, M. C., Boyd, C., DeVeausse Brown, N., Rostad, W., Patterson, A., . . . Lai, B. (2018). The impact of SafeCare® Dads to Kids program on father maltreatment risk and involvement: Outcomes and lessons learned from an efficacy trial. *Child Abuse & Neglect*, *83*, 31-41. https://doi.org/10.1016/j.chiabu.2018.06.014

* Sim, A., Puffer, E., Green, E., Chase, R., Zayzay, J., Garcia-Rolland, E., & Boone, L. (2014). Parents make the difference: findings from a randomized impact evaluation of a parenting program in rural Liberia. *New York: International Rescue Committee*. https://www.rescue.org/sites/default/files/document/704/parentsmakedifferencereportfinal18nov14.pdf

Skafida, V., Morrison, F., & Devaney, J. (2022). Intimate partner violence and child maltreatment in Scotland – Insights from nationally representative longitudinal survey data. *Child Abuse & Neglect*, *132*, 105784. https://doi.org/10.1016/j.chiabu.2022.105784

* Smith, M. J., & Morote, E.-S. (2010). *Perceptions of parenting practices of incarcerated fathers who have received parent training and those who have not in a federal prison in a northeastern urban community* Dowling College].

* Solís-Cámara, P., Medina Cuevas, Y., & Díaz Romero, M. (2015). Análisis comparativo de predictores potenciales de prácticas disciplinarias severas con preescolares, antes y después de un entrenamiento para padres [Comparative analysis of predictive factors of severe disciplinary practices with preschoolers, before and after parent training]. *Acta Colombiana de Psicologia*, *18*(2), 139-150. https://doi.org/10.14718/ACP.2015.18.2.12

* Solís-Cámara, P., Salcido, P. C., Romero, M. D., & Aguirre, B. R. (2004). Efectos multidimensionales de un programa de crianza en la interacclón recíproca entre padres y sus niños pequeños con problemas de comportamiento [Multidimensional effects of a parenting program on the reciprocal interaction between parents and their young children with behavior problems]. *Psicologia Conductual*, *12*, 197-214.

* Sourander, A., McGrath, P. J., Ristkari, T., Cunningham, C., Huttunen, J., Lingley-Pottie, P., . . . Unruh, A. (2016). Internet-Assisted Parent Training Intervention for Disruptive Behavior in 4-Year-Old Children: A Randomized Clinical Trial. *JAMA Psychiatry*, *73*(4), 378-387. https://doi.org/10.1001/jamapsychiatry.2015.3411

* Spaccarelli, S., Cotler, S., & Penman, D. (1992). Problem-solving skills training as a supplement to behavioral parent training. *Cognitive Therapy and Research*, *16*(1), 1-17. https://doi.org/10.1007/BF01172953

Stewart, L. A., Clarke, M., Rovers, M., Riley, R. D., Simmonds, M., Stewart, G., . . . for the, P.-I. P. D. D. G. (2015). Preferred Reporting Items for a Systematic Review and Meta-analysis of Individual Participant Data: The PRISMA-IPD Statement. *JAMA*, *313*(16), 1657-1665. https://doi.org/10.1001/jama.2015.3656

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect*, *22*(4), 249-270. https://doi.org/10.1016/S0145-2134(97)00174-9

Tanner-Smith, E. E., Tipton, E., & Polanin, J. R. (2016). Handling complex meta-analytic data structures using robust variance estimates: A tutorial in R. *Journal of Developmental and Life-Course Criminology*, *2*(1), 85-112. https://doi.org/10.1007/s40865-016-0026-5

UN. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development. Resolution A/RES/70/1. Adopted September, 2015*. United Nations. https://sdgs.un.org/2030agenda

UNESCO. (2011). *International standard classification of education 2011*.

UNICEF. (2014). *Hidden in plain sight: A statistical analysis of violence against children*. https://data.unicef.org/resources/hidden-in-plain-sight-a-statistical-analysis-of-violence-against-children/

U.S. Department of Health and Human Services (2006). *Child maltreatment.*

van der Put, C. E., Assink, M., Gubbels, J., & Boekhout van Solinge, N. F. (2018). Identifying Effective Components of Child Maltreatment Interventions: A Meta-analysis. *Clinical Child and Family Psychology Review*, *21*(2), 171-202. https://doi.org/10.1007/s10567-017-0250-5

* Villodas, M. T., Moses, J. O., Cromer, K. D., Mendez, L., Magariño, L. S., Villodas, F. M., & Bagner, D. M. (2021). Feasibility and promise of community providers implementing home-based parent-child interaction therapy for families investigated for child abuse: A pilot randomized controlled trial. *Child Abuse & Neglect*, *117*, 105063. https://doi.org/10.1016/j.chiabu.2021.105063

* Ward, C. L., Wessels, I. M., Lachman, J. M., Hutchings, J., Cluver, L. D., Kassanjee, R., . . . Gardner, F. (2020). Parenting for Lifelong Health for Young Children: a randomized controlled trial of a parenting program in South Africa to prevent harsh parenting and child conduct problems. *Journal of Child Psychology and Psychiatry*, *61*(4), 503-512. https://doi.org/10.1111/jcpp.13129

* Webster-Stratton, C. (1984). Randomized trial of two parent-training programs for families with conduct-disordered children. *Journal of Consulting & Clinical Psychology*, *52*(4), 666-678. https://doi.org/10.1037/0022-006X.52.4.666

* Webster-Stratton, C. (1990). Enhancing the effectiveness of self-administered videotape parent training for families with conduct-problem children. *Journal of Abnormal Child Psychology*, *18*(5), 479-492. https://doi.org/10.1007/BF00911103

Webster-Stratton, C. (1998). Preventing conduct problems in Head Start children: strengthening parenting competencies. *Journal of consulting and clinical psychology*, *66*(5), 715-730. https://doi.org/10.1037/0022-006X.66.5.715

+ Weeland, J., Chhangur, R. R., van der Giessen, D., Matthys, W., de Castro, B. O., & Overbeek, G. (2017). Intervention effectiveness of The Incredible Years: New insights into sociodemographic and intervention-based moderators. *Behavior Therapy*, *48*(1), 1-18. https://doi.org/10.1016/j.beth.2016.08.002

Weisenmuller, C., & Hilton, D. (2021). Barriers to access, implementation, and utilization of parenting interventions: Considerations for research and clinical applications. *American psychologist*, *76*(1), 104-115. https://doi.org/10.1037/amp0000613

WHO. (2016). *INSPIRE: Seven strategies for ending violence against children*. https://www.who.int/publications/i/item/9789241565356

* Wolfe, D. A., Edwards, B., Manion, I., & Koverola, C. (1988). *Early intervention for parents at risk of child abuse and neglect: A preliminary investigation* American Psychological Association.

* Yao, A., Shimada, K., Kasaba, R., & Tomoda, A. (2022). Beneficial Effects of Behavioral Parent Training on Inhibitory Control in Children With Attention-Deficit/Hyperactivity Disorder: A Small-Scale Randomized Controlled Trial. *Front Psychiatry*, *13*, 859249. https://doi.org/10.3389/fpsyt.2022.859249

* Zahra, E. D., Nazanin, V., Reza, E. M., Sima, K., & Zohreh, S. (2014). Implementation of mother-training program to improve parenting in pre-school age children: a randomized-controlled trial. *North american journal of medical sciences*, *6*(8), 391-395. https://doi.org/10.4103/1947-2714.139289

Zielinski, D. S. (2009). Child maltreatment and adult socioeconomic well-being. *Child Abuse & Neglect*, *33*(10), 666-678. https://doi.org/https://doi.org/10.1016/j.chiabu.2009.09.001

7 General Discussion

7.1 Overview of the DPhil findings

This thesis aimed to advance the scientific understanding of parenting interventions and their effectiveness in reducing violence against children.

Three specific research questions were addressed, resulting in three stand-alone publications:

1. How similar are child maltreatment and harsh parenting instruments in the physical and emotional violent behaviours they include? *(DPhil Paper 1)*

2. What are the effects over time of parenting interventions to reduce physical and emotional violence? *(DPhil Paper 2)*

3. Do parenting interventions have differential effects in reducing violent parenting behaviours for families facing social disadvantage? *(DPhil Paper 3)*

This thesis has systematically identified, appraised, and synthesised two bodies of evidence to answer the above stated research questions. It first demonstrates in a mixed-method study that measures of child maltreatment and harsh parenting strongly overlap (*DPhil Paper 1)*. In line with this finding, the following studies (*DPhil Papers 2 & 3*) operationalised violence against children as any physical or emotional violent behaviour by parents regardless of the terminology associated with the measurement. Meta-analytic findings showed that parenting interventions effectively reduce violence against children immediately after the intervention and also at later follow-up, even though effects become smaller over time (*DPhil Paper 2)*. Lastly, this thesis highlighted that parenting interventions are equally effective for parents from different levels of social disadvantage. By harnessing the power of traditional and individual participant data meta-analyses, the findings suggest no differences in effects by levels of education, income, joblessness, and ethnic minority status (*DPhil Paper 3*).

The detailed research findings can be summarised as:

DPhil Paper 1: This paper demonstrates that there is substantial overlap in the parenting behaviours measured in child maltreatment and harsh parenting instruments: a total of 73% of parenting behaviours were shared between instruments. Physical behaviours measured in both child maltreatment and harsh parenting instruments were spanking or hitting with an object or hand, slapping, grabbing, hitting hard or with a fist, beating up, shaking, hitting with knuckles, giving harmful food or liquid, kicking, pinching, pulling hair, and pushing or throwing down. The following emotional behaviours were identified in both child maltreatment and harsh parenting instruments: scolding, yelling, shouting, screaming, threatening, insulting, humiliating, calling names, blaming, making fun of, cursing, or swearing. Multiple behaviours were only included in child maltreatment instruments: burning, choking, forcing to stand or kneel, twisting a body part, tying up, and withholding a meal. These behaviours unique to child maltreatment instruments were all physical violent behaviours; there were no unique emotional violent behaviours in child maltreatment instruments. Furthermore, there were no unique violent behaviours measured in harsh parenting instruments – all behaviours in harsh parenting instrument were also identified in child maltreatment instruments. Lastly, this paper found high levels of heterogeneity in the behaviours measured between and within harsh parenting and child maltreatment instruments, indicating that not every instrument focused on each concept respectively includes the same behaviours creating a potential risk in measurement selection. This study is the first one to compare child maltreatment and harsh parenting self-report instruments and to assess levels of homogeneity between and within child maltreatment and harsh parenting instruments. Thereby, the findings add to the current debate on whether child maltreatment and harsh parenting are indeed different constructs. The findings from this thesis suggest that they are operationalised in a similar manner.

DPhil Paper 2: Using robust variance estimation meta-analysis in the largest set of parenting intervention trials to date, this paper found that parenting interventions based on social learning theory are an effective strategy to reduce physical and emotional violence perpetrated by parents and caregivers. These findings are based on 346 eligible RCTs, of which 60 provided data on physical and emotional violence. Furthermore, the meta-analysis found that parenting interventions reduce violence at post-test, but also over time up to the maximum available measurement point of 24 months follow-up. However, effects were smaller at 1–6 months and 7–24 months follow-up, compared to immediately after the intervention. These findings are partly in line with previous exploratory research suggesting sustained effects. While this thesis did indeed find a continued effect over time, the findings showed a decline in effect at follow-up. Therefore, this thesis neither concludes a sustained, fade out, or increased effect, but instead a smaller yet maintained effect over time. For a discussion on the magnitude of the effect, see *Section 7.3.2*.

DPhil Paper 3: The last paper revealed that parenting interventions are unlikely to widen social inequalities in violence against children. Differential effects based on four factors of social disadvantage (low income, low levels of education, joblessness, ethnic minority status) were tested using traditional aggregate-level meta-analysis and individual participant data meta-analysis. Both analyses found no significant moderation effect for any of the above stated social disadvantage moderators. Previous research relied on individual trials and aggregate-level meta-analysis, both of which methods are not well-powered to examine moderation effects. Given that parenting interventions are currently disseminated across the globe, it is important to examine whether these interventions have the potential to widen social and economic inequalities. Consequently, this paper overcame these previous methodological challenges by harnessing the complementary strengths of both meta-analytic methods.

7.2 Strengths and limitations

The research underlying this DPhil thesis has several strengths and limitations. The specific study strengths and limitations are discussed in the relevant sections at the end of each empirical chapter (*DPhil Paper 1*, *DPhil Paper 2*, *DPhil Paper 3;* Chapters 4 – 6), and the strengths and limitations of the study designs used in this thesis are described in the methodology chapter (Chapter 3). This section describes the overarching strengths and limitations of the research presented in this thesis.

7.2.1 Overarching strengths of this thesis

Strengths of this DPhil thesis lie in its rigorous methodology, novel approach, and timely findings.

First, this thesis applied rigorous methodology to examine the three specific research questions. It i.) used gold standard study designs, including systematic review, randomised controlled trial, and individual participant data meta-analysis; ii.) applied state-of-the-art statistical methods appropriate to the questions asked, including robust variance estimation meta-analysis, multi-level modelling, and the Jaccard Index assessment; and iii.) followed best practice guidance including PRISMA guidelines, GRADE assessment, exhaustive searches (including non-English databases), and pre-registration of systematic reviews and analyses. In addition, this thesis advanced a previously established method to examine the construct validity of instruments using the Jaccard Index. Previous studies using the Jaccard Index only examined the homogeneity within instruments measuring the same construct (e.g., Fried, 2017). This thesis expanded on this method by also comparing the homogeneity between instruments that measure two different constructs. Furthermore, this thesis aimed for a consistent and valid operationalisation of violence against children, since research findings are highly determined by operationalisation of a construct. This was achieved by a thorough construct validity analysis of instruments measuring violent parenting behaviours (i.e., child

maltreatment, harsh parenting), and subsequently using these findings to inform the decision of instruments included in the evidence syntheses (i.e. instruments with at least 50% of items measuring physical or emotional violence, regardless of how the instrument was labelled). Furthermore, the systematic review and traditional meta-analysis presented in this thesis overcame several limitations of previous evidence syntheses. Accordingly, i.) the review included only randomised controlled trials of social learning theory-based parenting interventions leading to a homogeneous set of rigorous parenting intervention evaluations, ii.) searched in multiple languages (English, Farsi, Thai, Spanish, Chinese, Russian) to identify, particularly, studies from low-and middle-income countries, and iii.) avoided maltreatment-associated terminology in search terms to be inclusive of studies that did not focus on child maltreatment but included measures of harsh parenting.

Second, this thesis provided novel approaches to research on violence against children. It presents a new perspective on examining instrument overlap between constructs and offers a thorough look on which behaviours are measured in violence against children instruments (*DPhil Paper 1*). The novel approach in *DPhil Paper 2* was to analyse changes in parenting intervention effects over time by grouping timepoints into meaningful categories (immediate, 1 – 6 months, and 7 – 24 months follow-up), rather than the standard approach to assume linearity in change and test the number of weeks of follow-up as a moderator. This allowed for the identification of a decrease in effect already after one month post-intervention, suggesting that the decrease in effect might not follow a linear trend. The novel approach in *DPhil Paper 3* was to combine traditional meta-analysis and individual participant data meta-analysis to examine equity effects of parenting interventions. In doing so, it investigated moderation effects on two levels that have different implications. Moderation on trial levels informs researchers, practitioners, and policymakers about whether trial composition impacts effects of parenting interventions, whereas moderation on

individual levels identifies if individual baseline characteristics interact with effects of parenting interventions.

Third, the findings of this thesis are timely. Despite the lack of consensus within the research community, and between practitioners and policymakers on what constitutes child maltreatment, a growing shift towards the term *violence against children* is apparent across research (for example in research on risk factors: Cerna-Turoff et al., 2021; prevalence: Devries et al., 2018; consequences: Fang et al., 2017; intervention effectiveness: McCoy et al., 2020). This is in line with the views of the Committee of the United Nations (UN) Convention on the Rights, and congruent with UNICEF's choice of words across numerous publications (e.g., UNICEF 2020). Furthermore, research examining the effects beyond post-test and equity effects of parenting interventions was urgently needed given the recent publication of the WHO Guidelines on parenting interventions (WHO, 2023) and subsequent increased interest by policymakers. Government officials can now be reassured that it is unlikely that social learning theory-based parenting interventions widen social inequalities and that effects unlikely fade out within the first two years after delivery of a parenting intervention.

7.2.2 Overarching limitations of this thesis

Several limitations of this DPhil thesis merit attention.

First, valid operationalisation of violence against children is challenging, in part because of its highly diverse nature. In this thesis, only physical and emotional violence were included, ignoring evidence on sexual violence and neglect. This approach was chosen since physical and emotional violence are the goal of many parenting interventions, and the most widely observed acts of violence perpetrated to children (UNICEF, 2014). Furthermore, most outcome data was based on parent self-report. Although self-report data yields the most accurate estimate, it is at risk of social desirability bias, particularly in parenting intervention

trials where blinding of parents is not possible. Therefore, the findings of *DPhil Paper 2 & 3* should be interpreted in light of this limitation. However, a recent parenting intervention review found higher effect sizes for parent and child outcomes when measured using observation than self-report (Beelmann et al., 2022), suggesting that parent report is not necessarily inflating the effect sizes of parenting interventions.

In addition, effects of parenting interventions were not examined by individual violent behaviours (e.g., by spanking vs. slapping a child). This was not possible since in aggregate-level meta-analysis only sub-scores or total scores from individual studies are accessible, and while item-level extraction is possible in individual participant data meta-analysis, the underlying studies in this set of analyses did not provide a range of different behaviours (most included instruments measured spanking or slapping a child). However, analysis separating out individual behaviours would be important since total scores may potentially conceal individual behaviour effects. For example, it may be that parenting interventions only reduce some violent behaviours but not others. While this knowledge needs to be rigorously examined using individual participant data meta-analysis, preliminary evidence from a small trial (n = 64) indeed suggests that the evaluated parenting intervention reduced humiliation of a child in front of others, but failed to reduce severe disregarding of a child by parents (Khosravan et al., 2018).

Second, the generalisability of the findings might be restricted. The evidence syntheses included only parenting interventions based on social learning theory. This allowed to reduce heterogeneity between trials and included the most widely distributed and established parenting interventions. However, this limited the generalisability of the findings to this specific type of parenting intervention. In addition, despite exhaustive attempts to identify trials from across the globe, including a multi-language search, the reviews largely identified evidence from high-income countries. This highlights an over-representation of

studies from those settings. This is critical, particularly given a tendency in research to generalise research findings from W.E.I.R.D (Western European Industrialised Rich Democratic) countries to non-W.E.I.R.D nations, often described as "Western bias" (Arnett, 2016). Context, an important factor of intervention evaluation as outlined in the Medical Research Council Framework for Developing and Evaluating Complex Interventions (Skivington et al., 2021), may strongly vary between countries, particularly between W.E.I.R.D and non-W.E.I.R.D nations. The potential of Western bias could not be overcome in this thesis, however it is important to note that a recent review focusing only on randomised trials of parenting interventions in low- and middle-income countries (LMICs) found similar effects of parenting interventions on reducing child maltreatment (d = –0.39) and harsh parenting (d = –0.37) (Backhaus & Gardner et al., 2023) as presented in this thesis (d = –0.37). Thus, parenting interventions appear to have similar effectiveness in LMICs. Yet, it is unclear whether parenting interventions in LMICs remain effective over time, since not enough studies from these settings provided follow-up data (Backhaus & Gardner et al., 2023). In addition, while the LMIC review found no moderation effect by family socio-economic status and parental education, it did not examine whether low income, joblessness, or ethnic minority status moderate the effects of parenting interventions in these settings. This knowledge is particularly important given that families living in LMICs already face higher disadvantage than families from W.E.I.R.D nations.

Third, the evidence syntheses strongly focused on intervention benefit. While harm was examined within the quantitative data by also including effect sizes in the direction of a null or harm results, harm might be more frequently reported in qualitative studies of parenting interventions such as in in-depth interviews with parents, and individual-level harm might be masked in aggregate-level data by trial average means. In fact, a review of qualitative evidence found some adverse effects related to parenting interventions such as

instances of increased conflict between parents or experiences of stigmatization. However, it appears that the benefits of parenting interventions outweigh the potential harms noted in a few studies (Gardner et al., 2023). Future research should examine whether harms might increase over time and whether social disadvantage is associated with more harms experienced.

7.3 Implications for research

This thesis has multiple implications for research on violence against children.

7.3.1 Consensus on terminology, definition, and operationalisations

DPhil Paper 1 provides a resource for primary research and evidence syntheses that might guide researchers in their decision of which instruments to include in their study of violence against children. More precisely, this paper gives an overview of which specific violent behaviours are included in which instruments, and how similar these instruments are. This resource should be seen as complementary to reviews that examined other psychometric properties of instruments measuring child maltreatment (e.g., Yoon et al., 2020). Yet, this paper also highlights that there is still a lack of consensus on which behaviours constitute child maltreatment and harsh parenting. Without consensus and a unified approach, there is substantial risk of not including the correct literature when estimating the global knowledge of violence against children. On the one hand, if child maltreatment and harsh parenting are indeed the same construct, there is a high risk that the current evidence base ignored relevant studies by not including findings from harsh parenting instruments (e.g., Hillis et al., 2016). On the other hand, if child maltreatment and harsh parenting are meaningfully different constructs, there is a high risk that the current evidence base is built on instruments that do not distinguish maltreating from harsh non-maltreating families (e.g., Devries et al., 2018). This includes global and local prevalence estimates, identification of risk factors, estimation of consequences, and analyses of intervention effectiveness. To inform the consensus

building approach on what constitutes harsh parenting and what constitutes child maltreatment, more knowledge on the individual violent behaviours perpetrated by parents is needed. For this, researchers should consider deriving from total scores of physical or emotional violence to specific items (i.e., individual violent behaviours). With this knowledge, we can identify which specific violent behaviours (e.g., spanking vs. twisting a body part) are most prevalent in families, the harms attached to these individual violent behaviours, the risk factors that may lead to different violent behaviours, and which behaviours are the ones we actually prevent in parenting interventions. With this knowledge, researchers can agree on a set of behaviours included in instruments and identify the correct term to describe these crucial violent behaviours.

7.3.2 Effects of parenting interventions over time

DPhil Paper 2 highlighted that parenting interventions effectively reduce violence against children over time. While this paper found a significant effect over time, the effect sizes at 1–6 (d = –0.24) and 7–24 months (d = –0.18) follow-up were significantly smaller compared to the immediate effect (d = –0.46). The magnitude of effect – represented as Cohen's d in this thesis (Cohen, 1988) – allows researchers to ascertain the practical significance of the statistical significance. Cohen suggested the following rule of thumb for interpreting the effect size: 0.20 represents a small effect, 0.50 a moderate effect, and 0.80 a large effect (Cohen, 1988). However, the importance of the magnitude should be seen in light of the importance for the participants of a given intervention (Litschge et al., 2010). In fact, Cohen noted that the "terms 'small', 'moderate', 'large' are relative, not only for each other, but to the area of behavioral science or even more particularly to the specific content and research method being employed in any given investigation" (Cohen 1988, p.25). As such, the meaningfulness of a magnitude of effect needs to be judged by researchers and should be based on real world factors, such as the opinions and voices of participants and other

beneficiaries (Mordock, 2000). In the context of parenting interventions, this judgement should be made according to the perceptions of benefits and satisfaction with a programme by parents and children. While qualitative and quantitative reviews provide evidence of parents' high satisfaction with the benefits of a programme (Bjørknes & Ortiz-Barreda, 2021; Butler et al., 2020), no systematic review examined the perception of children regarding programme benefit. Nevertheless, a few studies have incorporated children's perspectives and showed positive views by children on programme benefits (e.g., Doubt et al., 2017). Yet, it is crucial to consider whether satisfaction with an intervention is linked to the magnitude of effect the programme produced – or in other words, whether parents only report satisfaction with a programme if the effect sizes are moderate to large. By reviewing qualitative studies of randomised controlled trials, it appears that satisfaction can be even found in studies with relatively small effects on violence against children. For example, a randomised controlled trial in Jamaica of the Irie Homes Toolbox parenting intervention found significant reductions in parents' use of violent disciplining (d = –0.29) (Francis & Baker-Henningham, 2021). While the effect size, according to Cohen's classification, should be considered as small, the qualitative evaluation of the intervention suggests overall satisfaction by parents with the benefits of the programme (Francis & Baker-Henningham, 2020; Francis et al., 2023). A randomised controlled trial in South Africa of the Parenting for Lifelong Health intervention for adolescents (Cluver et al., 2017) found a reduction in parental verbal and physical violence at 1 month post-test reported by caregivers (d = –0.42) and adolescents (d = –0.22). In line with the previous example, qualitative findings indicate overall satisfaction with the benefits of the intervention by both parents and adolescents (Doubt et al., 2017), indicating that even a small effect represents a meaningful effect in parenting interventions. Moreover, it can be argued that any robust effect size larger than null, favouring beneficial outcomes, is meaningful as it signifies that at least some children experienced reduced

violence after participation in an intervention, thereby protecting them from potential long-term adverse consequences. The analyses in this paper revealed that even after 2-years follow-up, the effect size remained at $d = –0.18$, only slightly smaller compared to the effect sizes described above that are still considered meaningful to parents and children. Of course, small effect sizes should be interpreted also in the light of the cost-effectiveness of interventions. Small effect sizes, however, do not necessarily suggest that programmes are not cost-effective. For example, a cost-effectiveness analysis of the South African trial (Redfern et al., 2019) demonstrated that the programme was cost-effective to prevent violence against adolescents by their caregivers, surpassing existing violence prevention programmes in South Africa. Taking this together, it appears that the magnitude of effect even at follow-up represents a meaningful and practical significant effect to reduce violence against children. Future research should strive to enhance the inclusion of child voices in their investigations on the meaningfulness of parenting interventions to changes in child lives.

Furthermore, *DPhil Paper 2* identified the need for future research focusing on i.) the long-term effect of parenting interventions beyond 2 years, and ii.) the potential factors that may lead to the drop in magnitude of effect over time. It might be that factors associated with the intervention moderate the effects over time. For example, different components in interventions address distinct changes in parenting behaviours. While employing logic consequences to manage child non-compliance might replace violence as a mean to discipline children (Doubt et al., 2017; Errázuriz et al., 2016), strengthening emotion regulation skills might reduce the risk for impulsive violent reactions towards children (Mejía et al., 2015; Miller et al., 2020). It is possible that these components and subsequent distinct changes in the family environment and parenting behaviours might be sustained at varying durations by parents. Furthermore, an additional possible moderator that might impact effectiveness over

time could be the duration of support (limited parenting course *vs.* boosters/ sustained support over time), as expressed by parents in qualitative studies:

> "Things hadn't been going well for a couple of months and I was at a loss. So I contacted them [the service providers] and I was back on track after a couple of weeks." (Furlong & McGilloway 2014, p.692),

> "The only thing I felt let down by was that once the course was finished, there should have been meetings once every three months, even just for the first year . . . I was going through a real bad patch and I'd gone so far out of the programme that I needed help. I know I should have rung them [the group facilitators] but what stopped me was that I hadn't heard from them since the end of the course. I felt so low and ashamed of myself." (Furlong & McGilloway 2014, p.692).

Multiple theories might explain why parents struggle to consistently apply the newly learned behaviours, often referred to as long-term behaviour adherence. Basic behavioural science reveals that new behaviours can be easily disrupted by changing contexts, thus, behaviour change is highly specific to the context it was learned in (Bouton, 2014). In regard to parenting interventions, it is possible that not all interventions prepare parents for new challenges that might arise from changing contexts, such as children getting older and moving into new developmental stages. For example, parents participating in the 1–2–3 Magic Parenting programme deemed the intervention as unsuitable when children were older (Allen et al., 2023). Furthermore, parenting interventions often ask parents to focus on a specific problematic child behaviour they would like to change. Thus, the generalisable parenting skills taught in these programmes might only be practiced in this specific context and not repeated in other situations with challenging child behaviour. This is of particular relevance given that behavioural scientists theorise that changing or replacing old behaviours

does not erase the original ones (Bouton, 2014), and that relapse into old behaviours should be expected. This was also expressed in qualitative interviews of parents participating in a social learning theory-based parenting intervention:

> "I think it could be a bit longer, that it could be monitored more in time because I'm really happy but when one stops coming, one starts to lose the training and that more precise control of things begins to dilute, because, there are behaviours in a child that will not change in a couple of months." (Errázuriz et al. 2016, p. 3446);

> "I really feel that the course was so good that I just feel that we need to follow it up, even just once a month or something... Because although the course is really good... I've forgotten some of it... I need some support to continue it... It's so difficult... because... for years and years you've... been... the way I've been brought up, and... then in... 8 or 10 weeks... they totally change your way of... doing things, and then after that you're left to your own devices... It's so easy to... go backwards." (Patterson et al. 2005, p. 59)

While relapse prevention is an essential behaviour change technique in a multitude of health interventions (Abraham & Michie, 2008), it appears to be less common in social interventions such as those focusing on change in parenting. Thus, practicing the new behaviours in many different contexts, and providing parents with pathways that assist parents in re-applying the newly acquired behaviours after relapse might be key for longer-term behaviour change. These pathways and possible threats to adherence to newly acquired parenting skills need further investigation in future parenting intervention research. Furthermore, parents might need sustained support or booster sessions to ensure long-term behaviour adherence, as expressed by parents in qualitative studies (e.g., Patterson et al., 2005). However, the evidence is i.) limited for the benefit of booster sessions with only one

study showing reduced relapse in child behaviour problems (Eyberg et al., 1998), and ii.) promising for the benefit of sustained support to reduce childhood adversity, such as the Family Check-Up Intervention where families have access to support when needed over time (Dishion et al., 2015). The increased delivery of digital support may provide facilitators with a feasible and less time-consuming option to keep in contact with families after the end of an intervention.

7.3.3 Equity effects of parenting interventions

DPhil Paper 3 found no indication that parenting interventions further widen social inequalities in violence against children based on analyses of four moderators: low income, low levels of education, joblessness, and belonging to an ethnic minority. Although this is an important and reassuring finding, it also means that this paper could not contribute to further examining reasons for the high levels of heterogeneity in intervention effects within and across trials. As highlighted in the introduction chapter of this thesis (*Section 2.2.5*), multiple evidence syntheses tried to examine which other factors might explain heterogeneity. However, these previous meta-analyses were unable to establish a coherent set of moderators due to mixed findings between reviews (Casillas et al., 2016; Chen & Chan, 2016; Euser et al., 2015; Lundahl et al., 2006; van der Put et al., 2018). These reviews highlight the complexity in the effectiveness of parenting interventions which could be further analysed by using logic models and programme theory that move from *if* there is a moderation effect to *why* there might be a moderation effect (Anderson et al., 2011; Maden et al., 2017). While randomised controlled trials and systematic reviews are recognised as important sources to examine differential effects (Jull et al., 2017; Tugwell et al., 2010), using additional methods to fully understand moderation pathways –including in other equity dimensions – is required, such as including qualitative studies (Welch et al., 2013). For example, qualitative studies

could provide more information on the context that might have been missed in structured questionnaires:

> "I found it very inflexible in terms of the time that we saw her [the facilitator]. It was a real problem and this is why we had to stop in the end because we were finding it difficult to continue with the meetings because of work schedules.... I know that you could say well this is your child and you should give, but … at the end of the day if we lost our jobs because we were going to this, would that be beneficial to the children in the long run?" (Attride-Stirling et al., 2004, p.355).

This quote highlights the benefit of qualitative research to inform moderation testing since this parent would have been grouped with other parents as *employed* in a quantitative moderation analysis. Yet, there seems to be meaningful variation within the employment status of parents that should be further examined in future studies.

Furthermore, more research is urgently needed to examine other sources of inequality such as initial access and engagement in parenting interventions. Various reviews have examined barriers to initial access to and subsequent enrolment in parenting interventions (Axford et al., 2012; Butler et al., 2020; Duppong-Hurley et al., 2016). However, a meta-analysis focusing on social disadvantage as a moderator for initial access is lacking due to challenges related to collating and reporting this data (Weisenmuller & Hilton, 2021). Nevertheless, multiple access barriers identified in previous studies might be particularly present in families facing social disadvantage, such as time demands due to engagement with additional services or multiple jobs (Axford et al., 2012; Duppong-Hurley et al., 2016), challenges related to reaching the delivery setting through transportation (Axford et al., 2012), other financial pressures (Butler et al., 2020), and general stress (Ortiz & Del Vecchio, 2013). However, it is worth noting that studies included in the aggregate-level meta-analysis of this *DPhil Paper 3* were successful in including families from varying levels of social

disadvantage (e.g., Breitenstein et al. 2016 enrolled parents from a disadvantaged, ethnically diverse setting; Sim et al. 2014 enrolled parents in a low-resource, post-conflict setting), and trials from the IPDMA were largely delivered in non-affluent areas and free of charge.

In addition, the initial barriers to accessing the intervention can also lead to challenges in maintaining parental engagement, as indicated by attendance and attrition rates. For example, even after enrolling in the intervention, barriers, such as transportation issues, might persist. A previous analysis of the IPDMA dataset revealed that families with low socio-economic status had reduced attendance rates in the Incredible Years programme (Berry et al., 2022). Given that the effects were examined in a trial setting, it is plausible that such families may have even lower attendance rates in the context of reduced effort for retention in real-world services. As such, future research should investigate barriers for initial access and subsequent engagement with a parenting intervention for socially disadvantaged groups in the service delivery and scale-up of parenting interventions. Furthermore, research should examine how to best integrate these interventions in existing service settings in a way that reduces potential access and engagement barriers.

7.4 Implications for policy

This thesis demonstrates that delivery of parenting interventions can be an effective strategy to reduce physical and emotional violence over time, and is equally effective even for families facing social disadvantage. However, despite its effectiveness, access to parenting interventions is still limited (Daly et al., 2015). Therefore, this thesis identified two key policy implications.

7.4.1 Scale-up of parenting programmes

First, parenting interventions based on social-learning theory should be made readily accessible for parents across the globe. This is supported by Recommendation number 2 of the WHO Guidelines on parenting interventions to prevent child maltreatment and enhance

parent-child relationships (WHO, 2023). The recommendation states that "Globally, evidence-based parenting interventions informed by social learning theory should be made readily accessible to all parents or caregivers of children aged 2–10 years, in group-based or individualized formats, delivered through a variety of stakeholders, including government organizations such as health, education or social services, and NGOs" (WHO, 2023, p. 19). In fact, the systematic review underlying *DPhil Papers 2 & 3* directly informed this recommendation (Backhaus, Gardner et al., 2023).

While access to a parenting intervention for all parents or caregivers in need of an intervention is essential, research identified multiple challenges related to the scale-up and reach of programmes (Welsh et al., 2010). One key challenge is related to the lack of facilitators. Previous research focusing on the dissemination of parenting programmes from the United Kingdom identified that multiple practitioners dropped out of the training (79%), and many that successfully completed the training were not able to practice the parenting intervention (retention rate: 42%) (Asmussen et al., 2012). Yet, dissemination of a parenting intervention in Norway showed higher training completion (Askeland et al., 2019) and retention rates (64%) (Sigmarsdóttir et al., 2019).

Another key challenge is related to the adaptation of a parenting intervention to a multitude of contexts while preserving the essential features of those interventions (i.e., fidelity), such as the components, number and lengths of sessions, and recommended number of staff (WHO, 2023). Adaptation might relate to cultural adaptation and can be defined as "systematic modification of an evidence-based treatment or intervention protocol to consider language, culture, and context in such a way that it is compatible with the client's cultural patterns, meanings, and values" (Bernal et al. 2009; p. 362). However, adaptation may also entail using fewer staff, or missing out essential intervention components. While cultural adaptation appears to not necessarily threaten fidelity (Mejía et al., 2017), a reduced number

of staff and components might impact the effectiveness of parenting interventions due to overburdened facilitators and the lack of essential intervention features relevant to the theory of change. Another form of adaptation might be related to the delivery agent of an intervention. While some interventions (e.g., Parent Child Interaction Therapy) require a professional background from the facilitators, and adaptation to less-trained facilitators might impact the effectiveness of the intervention, other interventions are set up to be delivered by a multitude of service providers or through digital formats. For example, Parenting for Lifelong Health is currently being scaled-up in the Thai health system and delivered by health visitors (GPI, 2022a), whereas the same programme is currently tested to be delivered in form of a text message or ChatBot (Awah et al., 2022; GPI, 2022b).

Furthermore, implementation should be supported by commitment on national level, a clear need assessment and identification of system readiness and fit, and sustainable funding of parenting interventions (UNICEF, 2020). Norway's scale-up of the Parent Management Training – Oregon (PMTO) can be considered as a successful example. From the very beginning, the large-scale implementation of PMTO was seen as a joint effort between programme developers, academia and the Ministry of Child and Family Affairs (Ogden et al., 2005). For this, a national implementation plan was set up that specified the need of i.) establishing a national implementation and research centre; ii.) development of plans for regional and local implementation at country and municipal level; iii.) establishment of a comprehensive therapist recruitment, training, and maintenance program; iv.) creation of a network for collaboration, supervision and quality control; and v.) research on clinical outcomes and the implementation process. To reach commitment on national and local levels, ministries invited all relevant health directors. Furthermore, sustainable funding was secured using public funding from the ministry, agency, and additional health resources (Tommeraas & Ogden, 2017).

Lastly, while these interventions are unlikely to widen social inequalities by disproportionally benefiting families already better off, it is the role of policymakers to ensure equal access to and engagement with these programmes when scaled-up. While inequity in outcome is unlikely, there is substantial risk for inequity of access to and engagement with these interventions (*see Section 7.3.3*).

7.4.2 Consensus on terminology

Second, this thesis identified a lack of consensus on the terms used when researching violence against children. This lack of consensus impacts policy decisions since legislation and policies are often informed by research findings. For example, the lack of consensus is apparent between United Nations (UN) entities. To describe violent parenting behaviours, the WHO mostly uses the term *child maltreatment* and incorporates it as one of six types of interpersonal violence (e.g., WHO, 2023; WHO, 2016a). Violent punishment is included in WHO's more recent definitions of maltreatment (see WHO, 2016a). On the one hand, UNICEF typically uses the term *violence against children* that strongly focuses on violent disciplining as apparent in their measure of violence in their Multiple Indicator Cluster Surveys. On the other hand, UNICEF uses the term *abuse* in their definition of violence against children, thus overlapping strongly with child maltreatment terminology (e.g., UNICEF, 2021). Both UN organisations work closely together and with governments around the globe and advocate for ending all forms of violence against children (e.g., Global Initiative to Support Parents, GISP, 2021 ; INSPIRE framework, WHO, 2016b). However, homogeneity in definition and terminology is crucial to ensure that there is a shared understanding of which behaviours are targeted between policymakers and the UN. For example, the WHO is currently preparing its next Global Status report on violence against children (previous WHO, 2014). The last survey asked governments whether they have national action plans in place to address child maltreatment. However, it remains unclear if

these plans encompass all forms of violence, such as physical or emotional punishment. While certain behaviours might be prohibited in a country, they may not be classified as child maltreatment (e.g., corporal punishment). For example, a previous WHO survey identified that Germany has an official action plan to reduce child maltreatment (WHO, 2014). Although corporal punishment is prohibited in Germany, the existing action plan focuses only on one type of child maltreatment: sexual violence and exploitation (BMFSFJ, 2011). As a consequence, the WHO might not provide support to end all forms of violence to such countries since the surveys that aim to identify countries in need of support might capture only some types of violence – particularly those classified as child maltreatment by a country – while ignoring others.

This situation might be further complicated by the translation of the term child maltreatment into different official languages across countries. In German, for example, the term *child maltreatment* is typically translated to *Kindesmissbrauch*, and the definition encompasses physical, emotional, and sexual abuse and neglect. However, in policy and public discourse, this term is largely associated with sexual violence, and thus moving physical and emotional violence largely into the background of policy.

Considering these factors, it is paramount to urgently establish global consensus on terminology, definition, and operationalisation of violence against children among researchers, but also international organisations, national policymakers, practitioners, child protection staff, and families and children. As such, a consensus building approach among the above stated entities using, for example, Delphi methods is urgently needed. To inform this consensus building approach, global leadership should further invest in research that aims to examine differences and similarities between constructs of violence against children, child maltreatment, and harsh parenting among a multitude of research questions. As such, research can highlight whether there are meaningful differences in, for example, the

prevalence, risk factors, prevention successes, and consequences of these different constructs. However, as *DPhil Paper 1* highlighted, current measurements of child maltreatment and harsh parenting might not be able to differentiate the constructs from each other. Consequently, future research should derive from total scales of measurements that amalgamate a multitude of behaviours, and instead focus on discrete effects of individual behaviours. Good examples for methods that separate out individual behaviour effects is available in the seminal work that focuses on the effects of spanking (see Gershoff & Grogan-Kaylor, 2016). Only by identifying the individual harms, risk factors, and prevalence rates associated with these violent behaviours, the international community can take informed decisions on which specific violent behaviours we aim to prevent and how to label them.

7.5 Dissemination and impact

The dissemination of findings from this DPhil included peer-reviewed academic publications, presentations at conferences and universities, presentations to policymakers, and two global webinars. *DPhil Paper 1* was published in Trauma, Violence & Abuse (Backhaus et al., 2022), and *DPhil Paper 2* in eClinicalMedicine The Lancet Discovery Series (Backhaus et al., 2023). *DPhil Paper 3* is currently prepared for submission. This candidate presented the findings of this thesis at the following academic annual meetings: 1) The International Society for the Prevention of Child Abuse and Neglect (2021, 2022), 2) Dutch Society for Developmental Psychology (2021 & 2022), 3) Society for Prevention Research (2021); and at the following research meetings: 1) University of Amsterdam, Department of Child Development and Education, Preventive Youth Care Research group (2021), 2) University of Oxford, Department of Social Policy and Intervention, Centre for Evidence-Based Intervention Research group (2019 & 2020), 3) University of Oxford, Department of Social Policy and Intervention, Violence Research group (2022), 4) University of Copenhagen,

Department of Public Health, Section meeting of Social Medicine (2023), 5) University of Copenhagen, Department of Public Health, Complex Public Health Intervention Research group (2022, 2023), 6) University of Copenhagen, Department of Psychology, Developmental Psychology Research group (2022).

Findings from this thesis have already strongly impacted policy guidance. More precisely, the systematic review and aggregate level meta-analysis led by this candidate and presented in *DPhil Papers 2 & 3* directly translated into Recommendation number 2 of the WHO Guidelines on parenting interventions to prevent child maltreatment and enhance parent-child relationships. Consequently, the effectiveness findings of this review were presented by the candidate to the WHO Guideline Development Group (2023). This group comprised of leaders in violence prevention representing UNICEF, WHO, UNODC, Global Partnership to End Violence against Children, International Rescue Committee, and leading academics from various regions across the globe. Furthermore, those findings were presented by the candidate in two global webinars on the WHO Guidelines (WHO Webinar, Global Parenting Initiative Webinar; 2023), and are published in the final evidence report of the WHO Guidelines (Backhaus, Gardner et al., 2023). The candidate was further invited to present findings from this thesis to the Danish policy network on child maltreatment (2023), including representatives from the Danish Save the Children, law enforcement, national government, health sector, and academia. Lastly, findings were distributed across various dissemination channels on social media that reached academics, practitioners, international organisations, and policymakers (2022 – 2023).

7.6 Conclusions

"If we change the beginning of the story, we change the whole story."

—WHO (2018)

Childhood is a momentous phase in life that lays the foundation of health and wellbeing and whose positive and negative experiences can last a lifetime. Over the past five decades, an understanding of the fundamental nature of childhood has grown, leading to joint global recognition and commitment to the protection of children's rights. However, since the ratification of the United Nations Convention on the Rights of the Child (UNCRC) nearly forty years ago (UN, 1989), constant violations of child rights persist. As such, many children still have no access to education, health care, or safeguarding from violence (Eurochild, 2021). While Nobel Peace Prize winner Malala Yousafzai and climate activist Greta Thunberg showed the world what can be done when children stand up for their rights, it is the responsibility of the international community to protect all rights of children, including the protection from violence. Yet, violence remains a reality for an estimated one billion children across the world (Hillis et al., 2016), leading to a multitude of adverse consequences to child health and development (Carr et al., 2020). The most common type of violence children experience is that perpetrated by their parents or other key caregivers, frequently in the context of disciplining (Devries et al., 2018). Interventions that target parents and their use of violence against children are implemented across the globe, rigorously researched, and promoted by multiple international organisations. Consequently, while violence against children is prevalent and pervasive, it is not inevitable. As such, this thesis tried to contribute to reducing the prevalence of violence against children by i.) encouraging policymakers and the research community to unite and reach consensus regarding terminology and measurement, to ensure that research findings are as accurate and impactful as possible, and ii.) showing that parenting interventions effectively reduce physical and emotional violence against children – over time and even in families with high levels of social disadvantage.

It is the candidate's hope that the findings of this thesis will further encourage fellow researchers to move the research and policy field to a joint understanding of violence against

children, and enable policymakers to leverage the results to guide their efforts to make parenting interventions accessible to all families in need of support.

References

Abraham, C., & Michie, S. (2008). A taxonomy of behavior change techniques used in interventions. *Health Psychology*, *27*, 379-387. https://doi.org/10.1037/0278-6133.27.3.379

Allen, S., Bradley, S. K., & Savage, E. (2023). Experience and impact of the 1-2-3 magic parent programme for children with ADHD on the family unit from the mothers' perspectives: A narrative analysis. *Journal of Child Health Care*, *27*(1), 5-17. https://doi.org/https://doi.org/10.1177/13674935211039933

Anderson, L. M., Petticrew, M., Rehfuess, E., Armstrong, R., Ueffing, E., Baker, P., . . . Tugwell, P. (2011). Using logic models to capture complexity in systematic reviews. *Research Synthesis Methods*, *2*(1), 33-42. https://doi.org/https://doi.org/10.1002/jrsm.32

Arnett, J. J. (2016). The neglected 95%: why American psychology needs to become less American. In A. E. Kazdin (Ed.), *Methodological issues and strategies in clinical research* (pp. 115-132). American Psychological Association. https://doi.org/https://doi.org/10.1037/14805-008

Askeland, E., Forgatch, M. S., Apeland, A., Reer, M., & Grønlie, A. A. (2019). Scaling up an Empirically Supported Intervention with Long-Term Outcomes: the Nationwide Implementation of GenerationPMTO in Norway. *Prevention Science*, *20*(8), 1189-1199. https://doi.org/10.1007/s11121-019-01047-9

Asmussen, K. A., Matthews, T., Weizel, K., Bebiroglu, N., & Scott, S. (2012). Evaluation of the National Academy of Parenting Practitioners' Training Offer in evidence based parenting programmes. https://core.ac.uk/download/pdf/4162727.pdf

Attride-Stirling, J., Davis, H., Farrell, L., Groark, C., & Day, C. (2004). Factors influencing parental engagement in a community child and adolescent mental health service: A

qualitative comparison of completers and non-completers. *Clinical Child Psychology and Psychiatry*, *9*(3), 347-361. https://doi.org/10.1177/1359104504043918

Awah, I., Green, O., Baerecke, L., Janowski, R., Klapwijk, J., Chetty, A. N., . . . Cluver, L. D. (2022). 'It provides practical tips, practical solutions!': acceptability, usability, and satisfaction of a digital parenting intervention across African countries. *Psychology, Health & Medicine*, *27*(S1), 107-123. https://doi.org/10.1080/13548506.2022.2113106

Axford, N., Lehtonen, M., Kaoukji, D., Tobin, K., & Berry, V. (2012). Engaging parents in parenting programs: Lessons from research and practice. *Children and Youth Services Review*, *34*(10), 2061-2071. https://doi.org/10.1016/j.childyouth.2012.06.011

Backhaus, S., Gardner, F., Schafer, M., Melendez-Torres, G. J., Knerr, W., & Lachman, J. M. (2023). *World Health Organization Guidelines on Parenting Interventions to Prevent Maltreatment and Enhance Parent–Child Relationships with Children aged 0-17 Years: Report of the Systematic Reviews of Evidence*. https://cdn.who.int/media/docs/default-source/documents/violence-prevention/systematic_reviews-for-the-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=158fd424_3

Backhaus, S., Leijten, P., Jochim, J., Melendez-Torres, G., & Gardner, F. (2023). Effects over time of parenting interventions to reduce physical and emotional violence against children: a systematic review and meta-analysis. *eClinicalMedicine*, *60*(102003). https://doi.org/10.1016/j.eclinm.2023.102003

Backhaus, S., Leijten, P., Meinck, F., & Gardner, F. (2022). Different instruments, same content? A systematic comparison of child maltreatment and harsh parenting instruments. *Trauma, Violence, & Abuse*, 15248380221134290. https://doi.org/10.1177/15248380221134290

Beelmann, A., Arnold, L. S., & Hercher, J. (2022). Parent training programs for preventing and treating antisocial behavior in children and adolescents: A comprehensive meta-analysis of international studies. *Aggression and Violent behavior*, 101798. https://doi.org/10.1016/j.avb.2022.101798

Bernal, G., Jiménez-Chafey, M. I., & Domenech Rodríguez, M. M. (2009). Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychology: Research and Practice*, *40*(4), 361-368. https://doi.org/10.1037/a0016401

Berry, V., Melendez-Torres, G. J., Axford, N., Axberg, U., de Castro, B. O., Gardner, F., . . . Leijten, P. (2022). Does Social and Economic Disadvantage Predict Lower Engagement with Parenting Interventions? An Integrative Analysis Using Individual Participant Data. *Prevention Science*. https://doi.org/10.1007/s11121-022-01404-1

Bjørknes, R., & Ortiz-Barreda, G. (2021). Are the voices of parents heard? A scoping review of satisfaction in parenting programs. *Evaluation and Program Planning*, *88*, 101928. https://doi.org/10.1016/j.evalprogplan.2021.101928

BMFSFJ. *Aktionsplan 2011 der Bunderregierung zum Schutz von Kindern und Jugendlichen vor sexueller Gewalt und Ausbeutung/ Actionplan 2011 of the German government for the proection of children and adolescents from sexual violence and exploitation*. https://www.bmfsfj.de/resource/blob/93224/dd75bbd7e80cd880520ae87f439dd85d/aktionsplan-2011-zum-schutz-von-kindern-und-jugendlichen-vor-sexueller-gewalt-data.pdf

Bouton, M. E. (2014). Why behavior change is difficult to sustain. *Preventive Medicine*, *68*, 29-36. https://doi.org/10.1016/j.ypmed.2014.06.010

Breitenstein, S. M., Fogg, L., Ocampo, E. V., Acosta, D. I., & Gross, D. (2016). Parent Use and Efficacy of a Self-Administered, Tablet-Based Parent Training Intervention: A

Randomized Controlled Trial. *JMIR mHealth uHealth*, *4*(2), e36. https://doi.org/10.2196/mhealth.5202

Butler, J., Gregg, L., Calam, R., & Wittkowski, A. (2020). Parents' Perceptions and Experiences of Parenting Programmes: A Systematic Review and Metasynthesis of the Qualitative Literature. *Clin Child Fam Psychol Rev*, *23*(2), 176-204. https://doi.org/10.1007/s10567-019-00307-y

Carr, A., Duff, H., & Craddock, F. (2020). A Systematic Review of Reviews of the Outcome of Noninstitutional Child Maltreatment. *Trauma, Violence, & Abuse*, *21*(4), 828-843. https://doi.org/10.1177/1524838018801334

Casillas, K. L., Fauchier, A., Derkash, B. T., & Garrido, E. F. (2016). Implementation of evidence-based home visiting programs aimed at reducing child maltreatment: A meta-analytic review. *Child Abuse & Neglect*, *53*, 64-80. https://doi.org/10.1016/j.chiabu.2015.10.009

Cerna-Turoff, I., Fang, Z., Meierkord, A., Wu, Z., Yanguela, J., Bangirana, C. A., & Meinck, F. (2021). Factors Associated With Violence Against Children in Low- and Middle-Income Countries: A Systematic Review and Meta-Regression of Nationally Representative Data. *Trauma, Violence, & Abuse*, *22*(2), 219-232. https://doi.org/10.1177/1524838020985532

Chen, M., & Chan, K. L. (2016). Effects of Parenting Programs on Child Maltreatment Prevention: A Meta-Analysis. *Trauma, Violence, & Abuse*, *17*(1), 88-104. https://doi.org/10.1177/1524838014566718

Cluver, L. D., Meinck, F., Steinert, J. I., Shenderovich, Y., Doubt, J., Romero, R. H., . . . Tsoanyane, S. (2017). Parenting for lifelong health: a pragmatic cluster randomised controlled trial of a non-commercialised parenting programme for adolescents and

their families in South Africa. *BMJ Global Health*, *3*(1), e000539. https://doi.org/10.1136/bmjgh-2017-000539

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Academic press.

Daly, M., Bray, R., Bruckauf, Z., Byrne, J., Margaria, A., Pecnik, N., & Samms-Vaughan, M. (2015). *Family and parenting support: Policy and provision in a global context* (921057317X). https://www.unicef-irc.org/publications/pdf/01%20family_support_layout_web.pdf

Devries, K., Knight, L., Petzold, M., Merrill, K. G., Maxwell, L., Williams, A., . . . Abrahams, N. (2018). Who perpetrates violence against children? A systematic analysis of age-specific and sex-specific data. *BMJ Paediatrics Open*, *2*(e000180). https://doi.org/10.1136/bmjpo-2017-000180

Dishion, T. J., Mun, C. J., Drake, E. C., Tein, J.-Y., Shaw, D. S., & Wilson, M. (2015). A transactional approach to preventing early childhood neglect: The Family Check-Up as a public health strategy. *Development and Psychopathology*, *27*(4pt2), 1647-1660. https://doi.org/10.1017/S0954579415001005

Doubt, J., Bray, R., Loening-Voysey, H., Cluver, L., Byrne, J., Nzima, D., . . . Medley, S. (2017). “It has changed”: understanding change in a parenting program in South Africa. *Annals of Global Health*, *83*(5-6), 767-776. https://doi.org/10.1016/j.aogh.2017.10.021

Duppong-Hurley, K., Hoffman, S., Barnes, B., & Oats, R. (2016). Perspectives on Engagement Barriers and Alternative Delivery Formats from Non-completers of a Community-Run Parenting Program. *Journal of Child and Family Studies*, *25*(2), 545-552. https://doi.org/10.1007/s10826-015-0253-0

Errázuriz, P., Cerfogli, C., Moreno, G., & Soto, G. (2016). Perception of Chilean Parents on the Triple P Program for Improving Parenting Practices. *Journal of Child and Family Studies*, *25*(11), 3440-3449. https://doi.org/10.1007/s10826-016-0492-8

Eurochild. (2021). *Our Europe, Our Rights, Our Future*.

Euser, S., Alink, L. R., Stoltenborgh, M., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2015). A gloomy picture: a meta-analysis of randomized controlled trials reveals disappointing effectiveness of programs aiming at preventing child maltreatment. *BMC Public Health*, *15*(1), 1068. https://doi.org/10.1186/s12889-015-2387-9

Eyberg, S. M., Edwards, D., Boggs, S. R., & Foote, R. (1998). Maintaining the treatment effects of parent training: The role of booster sessions and other maintenance strategies. *Clinical Psychology: Science and Practice*, *5*(4), 544-554. https://doi.org/10.1111/j.1468-2850.1998.tb00173.x

Fang, X., Zheng, X., Fry, D. A., Ganz, G., Casey, T., Hsiao, C., & Ward, C. L. (2017). The Economic Burden of Violence against Children in South Africa. *International Journal of Environmental Research and Public Health*, *14*(11), 1431. https://doi.org/10.3390/ijerph14111431

Francis, T., & Baker-Henningham, H. (2020). Design and Implementation of the Irie Homes Toolbox: A Violence Prevention, Early Childhood, Parenting Program. *Frontiers in Public Health*, *8*. https://doi.org/10.3389/fpubh.2020.582961

Francis, T., & Baker-Henningham, H. (2021). The Irie Homes Toolbox: A cluster randomized controlled trial of an early childhood parenting program to prevent violence against children in Jamaica. *Children and Youth Services Review*, *126*, 106060. https://doi.org/10.1016/j.childyouth.2021.106060

Francis, T., Packer, D., & Baker-Henningham, H. (2023). A qualitative evaluation of the mechanisms of action in an early childhood parenting programme to prevent violence against children in Jamaica. *Child: Care, Health and Development*, *49*(3), 579-590. https://doi.org/10.1111/cch.13074

Fried, E. I. (2017). The 52 symptoms of major depression: Lack of content overlap among seven common depression scales. *Journal of Affective Disorders*, *208*, 191-197. https://doi.org/10.1016/j.jad.2016.10.019

Furlong, M., & McGilloway, S. (2014). The longer term experiences of parent training: a qualitative analysis. *Child: Care, Health and Development*, *41*(5), 687-696. https://doi.org/10.1111/cch.12195

Gardner, F., Shenderovich, Y., McCoy, A., Schafer, M., Martin, M., Janowski, R., . . . Ward, C. (2023). *WHO guidelines on parenting interventions to prevent maltreatment and enhance parent–child relationships with children aged 0–17 years: Report of the reviews for the WHO-INTEGRATE framework* https://cdn.who.int/media/docs/default-source/documents/violence-prevention/who-integrate-reviews-for-who-parenting-guideline-jan-27th-2023.pdf?sfvrsn=7f96ae56_3

Gershoff, E. T., & Grogan-Kaylor, A. (2016). Spanking and child outcomes: Old controversies and new meta-analyses. *Journal of Family Psychology*, *30*(4), 453-469. https://doi.org/10.1037/fam0000191

GISP. (2021). *Global Initiative to Support Parents – Inter-Agency Vision*. https://www.who.int/publications/m/item/global-initiative-to-support-parents

GPI. (2022a). Parenting within the Public Health System in Thailand. *2023*. Retrieved 22.06.2023, from https://globalparenting.org/parenting-within-the-public-health-system-in-thailand

GPI. (2022b). ParentText, launched in South Africa! Retrieved 22.06.2023, from https://globalparenting.org/article/parenttext-launches-in-south-africa

Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global Prevalence of Past-year Violence Against Children: A Systematic Review and Minimum Estimates. *Pediatrics*, *137*(3), e20154079. https://doi.org/10.1542/peds.2015-4079

Jull, J., Whitehead, M., Petticrew, M., Kristjansson, E., Gough, D., Petkovic, J., . . . Edwards, S. (2017). When is a randomised controlled trial health equity relevant? Development and validation of a conceptual framework. *BMJ Open*, *7*(9), e015815. https://doi.org/10.1136/bmjopen-2016-015815

Khosravan, S., Sajjadi, M., Moshari, J., & Sofla, F. B. S. (2018). The effect of education on the attitude and child abuse behaviors of mothers with 3-6 Year old children: a randomized controlled trial study. *International Journal of Community-based Nursing and Midwifery*, *6*(3), 227-238. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6048005/

Litschge, C. M., Vaughn, M. G., & McCrea, C. (2010). The empirical status of treatments for children and youth with conduct problems: An overview of meta-analytic studies. *Research on Social Work Practice*, *20*(1), 21-35. https://doi.org/10.1177/1049731508331247

Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: moderators and follow-up effects. *Clinical Psychology Review*, *26*(1), 86-104. https://doi.org/10.1016/j.cpr.2005.07.004

Maden, M., Cunliffe, A., McMahon, N., Booth, A., Carey, G. M., Paisley, S., . . . Gabbay, M. (2017). Use of programme theory to understand the differential effects of interventions across socio-economic groups in systematic reviews-a systematic

methodology review. *Systematic reviews*, *6*(1), 266-266. https://doi.org/10.1186/s13643-017-0638-9

McCoy, A., Melendez-Torres, G. J., & Gardner, F. (2020). Parenting interventions to prevent violence against children in low- and middle-income countries in East and Southeast Asia: A systematic review and multi-level meta-analysis. *Child Abuse & Neglect*, *103*, 104444. https://doi.org/10.1016/j.chiabu.2020.104444

Mejía, A., Leijten, P., Lachman, J. M., & Parra-Cardona, J. R. (2017). Different Strokes for Different Folks? Contrasting Approaches to Cultural Adaptation of Parenting Interventions. *Prevention Science*, *18*(6), 630-639. https://doi.org/10.1007/s11121-016-0671-2

Mejía, A., Ulph, F., & Calam, R. (2015). An exploration of parents' perceptions and beliefs about changes following participation in a family skill training program: a qualitative study in a developing country. *Prevention Science*, *16*, 674-684. https://doi.org/10.1007/s11121-014-0530-y

Miller, K. E., Ghalayini, H., Arnous, M., Tossyeh, F., Chen, A., van den Broek, M., . . . Jordans, M. J. (2020). Strengthening parenting in conflict-affected communities: development of the Caregiver Support Intervention. *Global Mental Health*, *7*, e14. https://doi.org/10.1017/gmh.2020.8

Mordock, J. B. (2000). Outcome assessment: Suggestions for agency practice. *Child Welfare*, 689-710. https://www.jstor.org/stable/45400245

Ogden, T., Forgatch, M. S., Askeland, E., Patterson, G. R., & Bullock, B. M. (2005). Implementation of parent management training at the national level: The case of Norway. *Journal of Social Work Practice*, *19*(3), 317-329. https://doi.org/10.1080/02650530500291518

Ortiz, C., & Del Vecchio, T. (2013). Cultural Diversity: Do We Need a New Wake-Up Call for Parent Training? *Behavior Therapy*, *44*(3), 443-458. https://doi.org/10.1016/j.beth.2013.03.009

Patterson, J., Mockford, C., & Stewart-Brown, S. (2005). Parents' perceptions of the value of the Webster-Stratton Parenting Programme: a qualitative study of a general practice based initiative. *Child: Care, Health and Development*, *31*(1), 53-64. https://doi.org/10.1111/j.1365-2214.2005.00479.x

Redfern, A., Cluver, L. D., Casale, M., & Steinert, J. I. (2019). Cost and cost-effectiveness of a parenting programme to prevent violence against adolescents in South Africa. *BMJ Global Health*, *4*(3), e001147. https://doi.org/10.1136/bmjgh-2018-001147

Sigmarsdóttir, M., Forgatch, M. S., Guðmundsdóttir, E. V., Thorlacius, Ö., Svendsen, G. T., Tjaden, J., & Gewirtz, A. H. (2019). Implementing an evidence-based intervention for children in Europe: evaluating the full-transfer approach. *Journal of Clinical Child & Adolescent Psychology*, *48*(S1), S312-S325. https://doi.org/10.1080/15374416.2018.1466305

Sim, A., Puffer, E., Green, E., Chase, R., Zayzay, J., Garcia-Rolland, E., & Boone, L. (2014). Parents make the difference: findings from a randomized impact evaluation of a parenting program in rural Liberia. *New York: International Rescue Committee*. https://www.rescue.org/sites/default/files/document/704/parentsmakedifferencereportfinal18nov14.pdf

Skivington, K., Matthews, L., Simpson, S. A., Craig, P., Baird, J., Blazeby, J. M., . . . Moore, L. (2021). A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. *BMJ*, *374*, n2061. https://doi.org/10.1136/bmj.n2061

Tommeraas, T., & Ogden, T. (2017). Is There a Scale-up Penalty? Testing Behavioral Change in the Scaling up of Parent Management Training in Norway. *Administration and Policy in Mental Health and Mental Health Services Research*, *44*(2), 203-216. https://doi.org/10.1007/s10488-015-0712-3

Tugwell, P., Petticrew, M., Kristjansson, E., Welch, V., Ueffing, E., Waters, E., . . . Kelly, M. P. (2010). Assessing equity in systematic reviews: realising the recommendations of the Commission on Social Determinants of Health. *BMJ*, *341*(7778), 873-877. https://doi.org/10.1136/bmj.c4739

UN. (1989). *Convention on the Rights of the Child*. https://www.ohchr.org/sites/default/files/crc.pdf

UNICEF. (2014). *Hidden in plain sight: A statistical analysis of violence against children*. https://data.unicef.org/resources/hidden-in-plain-sight-a-statistical-analysis-of-violence-against-children/

UNICEF. (2020). *Designing parenting programmes for violence prevention: A guidance note*. https://www.unicef.org/media/77866/file/Parenting-Guidance-Note.pdf

UNICEF. (2021). *Child Protection Strategy 2021–2030*. https://www.unicef.org/media/104416/file/Child-Protection-Strategy-2021.pdf

van der Put, C. E., Assink, M., Gubbels, J., & Boekhout van Solinge, N. F. (2018). Identifying Effective Components of Child Maltreatment Interventions: A Meta-analysis. *Clinical Child and Family Psychology Review*, *21*(2), 171-202. https://doi.org/10.1007/s10567-017-0250-5

Weisenmuller, C., & Hilton, D. (2021). Barriers to access, implementation, and utilization of parenting interventions: Considerations for research and clinical applications. *American psychologist*, *76*(1), 104-115. https://doi.org/10.1037/amp0000613

Welch, V. A., Petticrew, M., O'Neill, J., Waters, E., Armstrong, R., Bhutta, Z. A., . . . Tugwell, P. (2013). Health equity: evidence synthesis and knowledge translation methods. *Systematic reviews*, *2*(43). https://doi.org/10.1186/2046-4053-2-43

Welsh, B. C., Sullivan, C. J., & Olds, D. L. (2010). When early crime prevention goes to scale: A new look at the evidence. *Prevention Science*, *11*, 115-125. https://doi.org/10.1007/s11121-009-0159-4

WHO. (2014). *Global status report on violence prevention 2014*. https://www.who.int/publications/i/item/9789241564793

WHO. (2016a). Global plan of action to strengthen the role of the health system within a national multisectoral response to address interpersonal violence, in particular against women and girls, and against children. https://www.who.int/publications/i/item/9789241511537#

WHO. (2016b). *INSPIRE: Seven strategies for ending violence against children*. https://www.who.int/publications/i/item/9789241565356

WHO. (2018). *Nurturing care for early childhood development: a framework for helping children survive and thrive to transform health and human potential* (924151406X). https://apps.who.int/iris/bitstream/handle/10665/272603/9789241514064-eng.pdf

WHO. (2023). WHO guidelines on parenting interventions to prevent maltreatment and enhance parent-child relationships with children aged 0–17 years. https://www.who.int/teams/social-determinants-of-health/violence-prevention/parenting-guidelines

Yoon, S., Speyer, R., Cordier, R., Aunio, P., & Hakkarainen, A. (2020). A systematic review evaluating psychometric properties of parent or caregiver report instruments on child maltreatment: part 2: internal consistency, reliability, measurement error, structural

validity, hypothesis testing, cross-cultural validity, and criterion validity. *Trauma, Violence, & Abuse*, *22*(5), 1296-1315. https://doi.org/10.1177/1524838020915591

Appendices

Appendix 1. Protocol of registered systematic review and aggregate-level meta-analysis

NIHR National Institute for Health and Care Research

PROSPERO
International prospective register of systematic reviews

Unpacking parenting interventions - who benefits the most? A systematic review and meta-analysis on the effectiveness of parenting interventions

Sophia Backhaus, Frances Gardner, Jamie M. Lachman, Patty Leijten, Wendy Knerr, G.J. Melendez-Torres

Citation

Sophia Backhaus, Frances Gardner, Jamie M. Lachman, Patty Leijten, Wendy Knerr, G.J. Melendez-Torres. Unpacking parenting interventions - who benefits the most? A systematic review and meta-analysis on the effectiveness of parenting interventions. PROSPERO 2019 CRD42019141844 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42019141844

Review question

1. In families of children aged 2-10 years of age, how effective are parenting programmes based on social-learning theory (SLT) compared to an inactive control in reducing negative parenting behaviour, that is, behaviour that increases the risk for, or results in, child maltreatment?
2. In parenting interventions for families of children aged 2-10 years of age, how do parent, household and country-level characteristics moderate effects on negative parenting behaviour?
3. In families of children aged 2-10 years of age, how effective are parenting programmes based on SLT compared to an inactive control group in improving child behavioural problems?
4. In families of children aged 2-10 years of age, how effective are parenting programmes based on SLT compared to an inactive control group in improving child outcomes and reducing child emotional problems, including depression, anxiety and traumatic stress?
5. In parenting interventions for families of children aged 2-10 years of age, how do child, parent, household and country-level characteristics moderate effects on child behavioural and emotional problems?

Note: Please note that the findings of the systematic review will be reported in separate publications. Review questions 1. & 2. are part of the first author's PhD (SB). Review questions 3, 4 & 5 will be addressed by other protocol authors.

Searches

Search strategy for earlier review. This review is an update of a systematic review conducted in 2014 (published: Leijten, Melendez-Torres, Knerr, & Gardner, 2016). Our previous search strategy aimed at identifying high-quality systematic reviews of parenting programmes, published in scientific peer-reviewed journals; described in Leijten et al., 2016.

Search strategy for the present, updated review.
We will update the review with an extensive search in the following electronic databases from 2014 to the latest available record: 3ie Database of Impact evaluations, ASSIA, Campbell Library, The Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials), EMBASE, ERIC, MEDLINE, National Criminal Justice Reference Service, The International Bibliography of the Social Sciences, PsycINFO, PILOTS;
and the following trial registries: ClinicalTrials.gov, Australian New Zealand Clinical Trials Registry, WHO International Clinical Trials Registry Platform, metaRegister of Controlled Trials (mRCT).

Searching other resources.
1. Another recent and ongoing systematic review from the authors focusing only on low- and middle-income countries will be used to find additional relevant studies. The review searched 37 additional databases and grey literature (Protocol: Wight, Gardner, Lachman, Knerr, Melendez-Torres, 2018; CRD42018088697);
2. We will carefully search reference lists from all studies meeting the inclusion criteria;

3. We will hand search up to 3 relevant journals from 2014 onwards that either; a) recurrently contain studies that we include, b) are found only via reference checking, c) are not indexed on databases we have searched.
4. We will identify high-quality systematic reviews of relevant interventions, published since 2014 in scientific peer-reviewed journals. The included studies tables or reference lists will be used to generate a list of potentially relevant trials. We will apply a forward search for published systematic reviews on the same topic.
5. We will contact experts via e-mail to solicit relevant papers.

Types of study to be included

We will include randomized controlled trials (RCTs), including cluster-RCTs.

Condition or domain being studied

First domain, parenting: Negative behaviours towards the child, such as harsh and inconsistent discipline, laxness/ poor monitoring, overprotective parenting, violence against children, or child maltreatment, positive parenting (relationship enhancement, communication, behaviour management and parent efficacy), and associated moderators of parenting training effectiveness related to parenting outcomes, including parent characteristics and mental health, household/family characteristics, and country-level characteristics.

Second domain, child outcomes: Child behavioural problems, child emotional problems, positive child behaviour, and associated moderators of parenting training effectiveness related to child outcomes.

Participants/population

Inclusion: Parents and other caregivers of children with a mean age between 2-10 years. If studies did not report the mean value, two steps will be taken: a. contacting the author(s) of the publication to ask for the children's mean age; b. if the observed mean value remains unclear, a theoretical mean will be calculated by using the minimum and maximum age value and dividing it by two.

Exclusion: We exclude trials specifically aimed at special groups such as physical, learning, or developmental disabilities, children with severe mental illness (ADHD is included, as long as the study explicitly focused on reducing conduct problems), and children in temporary foster care. We exclude adults providing care to children in institutional and non-residential settings.

Intervention(s), exposure(s)

The parenting interventions under review need to have at least 50% of sessions or content directed at parents and they must be the main target. The interventions have a clear theoretical foundation comprising techniques largely based on the principles of social learning theory (SLT). SLT posits that children develop disruptive behaviour when parents unwittingly reward disruptive behaviour instead of positive behaviour, and model aversive behaviour. Interventions based on SLT teach parents behaviour management skills and alternatives to harsh and abusive parenting.

We exclude interventions that focus mainly (more than 50% of sessions or content) on specific aspects of parenting, such as toileting, sexual health, feeding, rather than general parenting skills.
We exclude interventions with parents which:
• focus narrowly on very specific child risks such as poisoning or accidents, or which teach skills for dealing with specific medical conditions or physical disabilities, such as asthma, epilepsy, HIV, psychosis, autism, Downs Syndrome or severe learning disabilities.
• primarily deliver financial support, social support, or other support to parents, but which do not aim to change parents' knowledge or behaviour (e.g., conditional cash transfer programmes, unless they include a parent training component, the effects of which can be analysed separately from other components).

Comparator(s)/control

We include studies without an active control condition: no treatment, wait-list, minimal intervention (e.g. telephone helpline), or care/treatment as usual or standard services which are either not manualized or not

specified and described as “services as usual”.

We exclude studies/ study arms with an active condition such as a variant of the same parenting intervention, a different parenting intervention, or an alternative intervention.

Context

Global.

Main outcome(s) [1 change]

The outcomes will be presented in the groupings they will be analysed.
Outcomes will be analysed as differences between groups on measures.

Negative parenting
Proposed definition: Negative attitudes and behaviours towards the target child, such as harsh and inconsistent disciplining, and poor monitoring, which have the potential to result in child maltreatment. If child maltreatment is reported, it will be analyzed.

Negative parenting towards children by parents or primary carers is categorized in three hierarchical levels:
1: Negative parenting overall
__2a: Harsh parenting (physical or psychological harshness),*
_____3a: Physical abuse (Child maltreatment)
_____3b: Psychological abuse (Child maltreatment)
__2b: Poor monitoring/ Laxness
_____3c: Neglect (Child maltreatment)
__2c: Overprotective parenting

Child behavioural and emotional problems
Proposed definition: Expression of emotional or behavioural maladjustment, such as externalizing and internalizing behaviours, including conduct problems, ADHD, substance use, depression and anxiety.

Child behavioural and emotional problems are classified in three hierarchical levels:
1: Child behavioural and emotional problems overall
__2a: Behavioural problems
____3a: Conduct problems, ODD, and aggressive behaviour
____3b: ADHD
____3c: Substance use
__2b: Emotional problems
____3d: Depression
____3e: Anxiety
____3f: Post-traumatic stress (PTS) symptoms

* based on an item-level investigation of harsh parenting and child maltreatment instruments in 2021 (Backhaus, Leijten, Meinck, & Gardner, accepted manuscript), there was a clear need to merge harsh and maltreatment instruments due to strong overlap in behaviours measured

Measures of effect

Included are pre-test, immediate post-test, and all available follow-up points with an intact RCT design (same intervention and control group as at post-test).

Negative parenting
measured by:
- systematic direct observational techniques (e.g. Dyadic Parent-Child Interaction Coding System, HOME inventory, Behavior Coding System), or
- instruments that rely on reports by parents or children (e.g., ISPCAN Child Abuse Screening Tools, Parenting Scale, Child Abuse Potential Inventory, Alabama Parenting Questionnaire, MICS Child Discipline, Parenting and Family Adjustment Scale), or

- if available: official reports of maltreatment (e.g. from law enforcement or child services agencies).

Child behavioural and emotional problems
measured by:
- systematic direct observational techniques (e.g. Dyadic Parent-Child Interaction Coding System, HOME inventory, Behavior Coding System), or
- instruments that rely on reports by parents or children (e.g., Strength and Difficulties Questionnaire, Eyberg Child Behavior Inventory, Child Behaviour Checklist).

Additional outcome(s)

Differences between groups on measures (including observational measures) of the following outcomes:

Positive parenting is classified in three hierarchical levels:
1: Positive parenting overall
__2a: Clear communication
__2b: Relationship enhancement
__2c: Behaviour management
_____3a: Positive reinforcement
_____3b: Non-violent disciplining
__2d: Parent efficacy

Positive child behaviour is measured on one level:
1: Positive child behaviour overall

Moderators
Potential outcomes that might moderate the effectiveness of parenting programmes in reducing negative parenting can be grouped along an ecological framework:

Parental characteristics and health: age, gender, marital status, education, parent(ing) stress, depression, anxiety, PTSD, parenting behaviour at baseline, acceptability of corporal punishment, etc.

Child characteristics and development/health: age, sex, child behaviour problems at baseline, etc.

Family/household characteristics: SES, ethnicity, income, etc.

Community and country-level characteristics: country, region, country income level, gross domestic product, corruption perception index, poverty, intimate partner violence rates, attitudes towards child maltreatment, Hofstede's Power distance index, prevalence of violence against children, etc.

Measures of effect

Included are pre-test, immediate post-test and all follow-up that follow the original RCT design.

Positive parenting and positive child behaviour
As measured by parent or child report (e.g., Alabama Parenting Questionnaire, Parenting Young Children, Parent Daily Report; or by systematic direct observation, e.g. Dyadic Parent-Child Interaction Coding System, HOME Inventory).

Moderators
As measured at baseline:
Parent characteristics and health by parent report (e.g., Family Background Questionnaire, Beck Depression Inventory, General Health Questionnaire, WHO-5 Wellbeing, Parent stress);
Child characteristics and development/health by parent report or observation (e.g. Strength and Difficulties Questionnaire);
Family/household characteristics (e.g., Family Background Questionnaire, Moos scale, Family Affective Attitude Rating Scale); and
Community and country characteristics (e.g., Family Background Questionnaire, study context, Global Health Observatory https://www.who.int/gho/en/, World Bank Governance indicators, Hofstede index).

Data extraction (selection and coding)

Data from updated search (2014- to latest available record)
The first author (SB) will screen titles and/or abstracts of all studies retrieved from databases which index records in English, and those from additional sources, with a random 20% of English-language records additionally screened by a collaborator (JJ) to ensure concordance. Studies clearly not meeting the criteria will be excluded at this stage. Titles and/or abstracts of studies in databases indexed in other languages than English will be screened by the other authors. The full text of all potentially eligible studies will be retrieved and assessed for eligibility by the first author (SB), with a random 20% assessed by a collaborator (JJ). Any disagreement between them over the eligibility of particular studies will be resolved through discussion with a third and fourth reviewer (FG, JML).
A standardized spreadsheet that was used in our recent reviews will be updated and revised based on the Cochrane Public Health Group Data Extraction and Assessment Template (Cochrane Collaboration, 2011). Please see full-length protocol (https://mfr.de-1.osf.io/render?url=https://osf.io/syb6d/?action=download%26mode=render) for detailed information on the spreadsheet.

Data from the prior review (up to 2014)
The first author will extract additional relevant data from studies identified in the first review (Leijten et al., 2016), with an independent data extraction on a random 20% of the original sample by a collaborator (JJ). Missing data will be requested via email from study authors when possible.

Data from a recent review focusing on low- and middle-income countries
The first author (SB) will identify relevant studies that have been found in the recent low-and middle-income review (Protocol: CRD42018088697). SB will apply the inclusion and exclusion criteria to each trial and extract all for this review relevant data to the spreadsheet. The second author (FG) will double-check independently the trials identified by SB.

Risk of bias (quality) assessment

The quality of the new included studies will be assessed by one review author (SB) with the Cochrane Risk of Bias Tool for RCTs, on:
1. Randomization sequence generation
2. Allocation concealment
3. Blinding of participants and personnel
4. Blinding of outcome assessment
5. Incomplete outcome data
6. Selective reporting
7. Other sources of bias

A second collaborator (JJ) will independently assess the risk of bias of a random 10% of the included studies. Disagreement will be resolved by discussion, and, if necessary, the involvement of a second review author (FG).

Strategy for data synthesis

Robust variance estimation will be used to synthesize effect sizes, including all relevant effect sizes from the same outcome domain (Tanner-Smith et al., 2016). We anticipate dependent effect size estimates in our studies.
Effect sizes (if not available) will be calculated using the Practical Meta-Analyses Effect Size Calculator by David B. Wilson (https://campbellcollaboration.org/escalc/html/EffectSizeCalculator-SMD1.php) and converted to Cohen's d. Reported effect sizes will be transformed to Cohen's d values using the same tool. For dichotomous outcomes, the logit transformation will be used to convert odds/risk ratios into standardized mean differences. Effect sizes will be labelled with respect to the outcome domain and the duration of follow-up, and will be grouped with dichotomous coding to pre-specified outcome groupings.
Where trials include multiple arms, we will extract each intervention-control comparison with reference to a common comparator. For cluster-randomized trials that did not account for clustering, we will inflate the standard errors of standardized mean differences using an estimated ICC or an ICC estimated from the variance components model in the included trial.

We will report weighted mean effect sizes, under a random model using 95% confidence intervals, accompanied with graphical representation.
In order to assess heterogeneity, we will use τ^2, Q-statistic and I^2. $\tau^2 > 1$ suggests the presence of substantial heterogeneity (Borenstein et al., 2009). Q-statistics will be reported including its value, degrees of freedom and p-values. We are planning multiple moderator analyses including meta-regression with a small n of studies. Q2 is statistically underpowered when the number of studies meta-analysed is small (Higgins et al., 2003), hence, we will also report I^2.
If we find heterogeneity, that is a moderate to large amount of heterogeneity (I^2= min. 50-70%; Higgins & Thompson, 2004), we continue with analyses of subgroups of subsets if more than 9 studies report on the same moderator (Higgins et al. 2008).

Analysis of subgroups or subsets

We will perform analysis to explore the potential role of specific moderators explaining the potential heterogeneity involved in our results.

We choose different moderators for our two different outcomes groups: a. parenting outcomes, b. child outcomes which have been decided on a priori basis. Moreover, in order to avoid an increased risk for Type I and Type II errors, the analyses will clearly state whether they are exploratory or confirmatory. Moderators will be presented in form of an evidence-map and moderators that could not be analysed due to methodological limitations will be described in narrative.

Based on our research question, theory and our knowledge of previous research we have anticipated a number of potential moderators. The moderators for our outcomes can be grouped into following domains:
1. Parent characteristics
2. Child characteristics
3. Family and household characteristics
4. Community and country-level characteristics
For a list of anticipated moderators, please see full-length protocol (https://mfr.de-1.osf.io/render?url=https://osf.io/syb6d/?action=download%26mode=render).
The final list of moderators will depend on the coding of parent/family characteristics and the availability of data of country-level characteristics. The list will be finalized and updated in the protocol before conducting meta-regression analyses.

The model might be adjusted by methodological issues such as collinearity and missingness. If we have highly correlated moderators we will choose the moderator with the higher number of studies that report on it.

Contact details for further information

Sophia Backhaus
sophia.backhaus@spi.ox.ac.uk

Organisational affiliation of the review

Department of Social Policy and Intervention, University of Oxford
https://www.spi.ox.ac.uk/

Review team members and their organisational affiliations

Ms Sophia Backhaus. Centre for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford
Professor Frances Gardner. Centre for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford
Dr Jamie M. Lachman. Centre for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford, and MRC/CSO Social and Public Health Sciences Unit, University of Glasgow
Dr Patty Leijten. Child Development and Education, University of Amsterdam

Ms Wendy Knerr. MRC/CSO Social and Public Health Sciences Unit, University of Glasgow
Professor G.J. Melendez-Torres. Peninsula Technology Assessment Group, University of Exeter.

Collaborators

Ms Janina Jochim. Centre for Evidence-Based Intervention, Department of Social Policy and Intervention, University of Oxford

Type and method of review

Intervention, Meta-analysis, Prevention, Systematic review

Anticipated or actual start date

15 July 2019

Anticipated completion date [1 change]

31 December 2022

Funding sources/sponsors

We would like to thank the ESRC Grand Union Doctoral Training Partnership and the Clarendon Fund for funding Sophia Backhaus.
We would like to express our thank to Knut Sundell for funding the previous review on parenting interventions.

Conflicts of interest

The review team shares a common interest in the effectiveness of parenting interventions to reduce the risk of child maltreatment and harsh parenting. Jamie Lachman and Frances Gardner are part of a team of developers of parenting programmes that are being tested and disseminated through the WHO Parenting for Lifelong Health initiative - a non-commercial initiative focused on developing, evaluating, and disseminating low-cost parenting programmes in low- and middle-income countries. Jamie Lachman is also the Executive Director of Clowns Without Borders South Africa, a non-profit organization responsible for disseminating and building capacity of the Parenting for Lifelong Health programmes for young children and adolescents.
Patty Leijten has been involved in one trial on the effectiveness of the Incredible Years parenting program in the Netherlands.

Yes

Language

English

Country

England

Stage of review [1 change]

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Humans; Parenting

Date of registration in PROSPERO

26 July 2019

Date of first submission

13 July 2019

Details of any existing review of the same topic by the same authors

Stage of review at time of this submission [2 changes]

Stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	No
Risk of bias (quality) assessment	Yes	No
Data analysis	No	No

Revision note

Pre-registration of moderation analyses.

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

26 July 2019
12 October 2022
30 May 2023

PROSPERO
This information has been provided by the named contact for this review. CRD has accepted this information in good faith and registered the review in PROSPERO. The registrant confirms that the information supplied for this submission is accurate and complete. CRD bears no responsibility or liability for the content of this registration record, any associated files or external websites.

Appendix 2. Ethics approval for systematic review



DEPARTMENT OF SOCIAL POLICY AND INTERVENTION
Barnett House, 32 Wellington Square,
Oxford, OX1 2ER, United Kingdom
www.spi.ox.ac.uk

Sophia Backhaus
Department of Social Policy and Intervention
University of Oxford

SPI_DREC_18_003

14th February 2019

Dear Sophia

Unpacking parenting programmes- who benefits the most? A systematic review and meta-analyses on parent training effectiveness for child maltreatment.

Your application for research ethics approval in connection with your thesis has been considered by the Departmental Research Ethics Committee (DREC) in accordance with the procedures laid down by the University for Ethical Approval.

I am pleased to inform you that, on the basis of the information provided, the proposed research has been judged as meeting appropriate ethical standards and DREC approval has been granted.

If any revisions to your research methodology are made subsequent to this approval, these must be detailed in writing and submitted to DREC immediately.

Yours sincerely,

Dr Jamie M. Lachman
Chair of DREC

Point of contact: ethics@spi.ox.ac.uk | +44 (0) 1865 280734
General enquiries: tel. +44 (0) 1865 270325

Appendix 3. Protocol of registered individual participant data review

NIHR | National Institute for Health Research

PROSPERO
International prospective register of systematic reviews

Parenting programs to support parents and reduce children's conduct problems: individual participant data meta-analysis (IPDMA) of European randomized trials (a follow-up of CRD42019141844)

Citation

Patty Leijten, Frances Gardner, Sophia Backhaus, G.J. Melendez-Torres. Parenting programs to support parents and reduce children's conduct problems: individual participant data meta-analysis (IPDMA) of European randomized trials (a follow-up of CRD42019141844). PROSPERO 2022 CRD42022262594 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42022262594

Review question

RQ1: What are the main effects of parenting programs on parents and children?

RQ2: How do parenting program effects vary by country, program, and family characteristics?

RQ3: What changes in parental mental health and behavior explain parenting program effects on child outcomes?

Searches [1 change]

We will use the systematic literature review conducted by PROSPERO #CRD42019141844, specified below. This review was last updated in September 2022.

We conduct an extensive search in the following electronic databases until the latest available record: 3ie Database of Impact evaluations, ASSIA, Campbell Library, The Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials), EMBASE, ERIC, MEDLINE, National Criminal Justice Reference Service, The International Bibliography of the Social Sciences, PsycINFO, PILOTS;

and the following trial registries: ClinicalTrials.gov, Australian New Zealand Clinical Trials Registry, WHO International Clinical Trials Registry Platform, metaRegister of Controlled Trials (mRCT).

Searching other resources.

1. Another recent and ongoing systematic review from the authors focusing only on low- and middle-income countries will be used to find additional relevant studies. The review searched 37 additional databases and grey literature (Protocol: Wight, Gardner, Lachman, Knerr, Melendez-Torres, 2018; CRD42018088697);

2. We will carefully search reference lists from all studies meeting the inclusion criteria;

3. We will hand search up to 3 relevant journals from 2014 onwards that either; a) recurrently contain studies that we include, b) are found only via reference checking, c) are not indexed on databases we have searched.

4. We will identify high-quality systematic reviews of relevant interventions, published since 2014 in scientific peer-reviewed journals. The included studies tables or reference lists will be used to generate a list of potentially relevant trials. We will apply a forward search for published systematic reviews on the same topic.

5. We will contact experts via e-mail to solicit relevant papers.

Principal investigators of eligible studies will be asked to share their data.

Types of study to be included [1 change]

Randomized controlled trials (including cluster-RCTs).

Condition or domain being studied

Parenting behavior and child mental health.

See #CRD42019141844 for more details.

Participants/population

Parents or caregivers of children (mean sample age 2-10 years). We exclude special populations where parenting and child mental health may be strongly influenced by the unique nature of the population (e.g., chronically ill children).

See #CRD42019141844 for more details.

Intervention(s), exposure(s) [1 change]

Parenting programs based on social learning theory (SLT) principles.

Parents should be the sole target of the program.

In line with the procedure of #CRD42019141844:

The interventions should have a clear theoretical foundation comprising techniques largely based on the principles of SLT. SLT posits that children develop disruptive behavior when parents unwittingly reward disruptive behavior instead of positive behavior, and model aversive behavior. Interventions based on SLT teach parents behavior management skills and alternatives to harsh and abusive parenting.

We exclude interventions that focus mainly (more than 50% of sessions or content) on specific aspects of parenting, such as toileting, sexual health, feeding, rather than general parenting skills.

We exclude interventions with parents which:

• focus narrowly on very specific child risks such as poisoning or accidents, or which teach skills for dealing with specific medical conditions or physical disabilities, such as asthma, epilepsy, HIV, psychosis, autism, Downs Syndrome or severe learning disabilities.

• primarily deliver financial support, social support, or other support to parents, but which do not aim to change parents' knowledge or behavior (e.g., conditional cash transfer programs, unless they include a parent training component, the effects of which can be analyzed separately from other components).

Comparator(s)/control [1 change]

Trials should include at least one passive control (e.g., no intervention, waitlist, or unstandardized care as usual).

We exclude studies/ study arms with an active condition such as a variant of the same parenting intervention, a different parenting intervention, or an alternative intervention.

Context [1 change]

Trials need to have been conducted in a European country (according to https://www.euro.who.int/en/countries).

This allows for a more homogenous set of studies (because usual care is more similar within Europe than between continents) and enhances feasibility.

Main outcome(s) [1 change]

Parenting behavior and child conduct problems.

Measures of effect

Standardized mean differences reflecting post-intervention differences between intervention and control, expressed as Cohen's d.

Additional outcome(s) [1 change]

Additional indicators of family well-being (e.g., parenting stress, parental depression, and children's emotional problems).

Measures of effect

Standardized mean differences reflecting post-intervention differences between intervention and control, expressed as Cohen's d.

Data extraction (selection and coding) [1 change]

Which data will be sought from researchers responsible for individual studies?

All available individual participant data:

- From all eligible conditions (i.e., all intervention and control conditions)

- From all assessment points (i.e., baseline, intermediate, immediate posttest and later follow-up assessments, if available);

- For all outcomes (e.g., parenting behavior, parental mental health, child mental health, etc.);

- From all instruments (e.g., survey and observation) and all informants (e.g., parents and teachers);

- At the raw item level (i.e., prior to reverse coding and scale score computation);

- For all participants.

Principal investigators of eligible trials will be asked to share only fully anonymized data:

- No personal data (e.g., names, date of birth, home addresses) will be shared;

- Family ID numbers will be changed such that they can no longer be linked to any key linking ID numbers to personal family data.

How authors will be contacted for the data?

The corresponding author of the main trial publication will be contacted by email. If the corresponding author does not respond after two reminders, spread over several months, the other study authors will be contacted by email.

How data will be stored and protected?

Data will be stored on a secured and password protected University of Amsterdam drive.

Any planned manipulation or transformation of the extracted data?

Item level data will be reverse scored where necessary, scale scores will be computed in line with instruments' protocols, and harmonized between trials where necessary to ensure comparability of data. We will follow the data harmonization procedures from Leijten and colleagues (2018).

Any processes for querying and confirming data with investigators?

We will contact the investigators to confirm data in cases where the data are insufficiently self-explanatory (e.g., whether item level scores are already reverse coded and whether items were administered in their original order and wording).

Risk of bias (quality) assessment

The quality of the new included studies will be assessed with the Cochrane Risk of Bias Tool for RCTs on:

1. Randomization sequence generation

2. Allocation concealment

3. Blinding of participants and personnel

4. Blinding of outcome assessment

5. Incomplete outcome data

6. Selective reporting

7. Other sources of bias

See #CRD42019141844 for more details.

In addition, we will conduct the following checks to validate the data.

1. Descriptive analysis to check for missing data.

2. Baseline equivalence tests for each trial and across trials to examine randomisation integrity.

3. Descriptive analysis to detect any errors (e.g., values that do not match the instrument's scale).

4. To reduce availability bias (i.e., differences between outcomes as collected and outcomes as provided), we will check for consistency of the data as provided with data as collected in trial protocols and publications.

Investigators will be contacted in case issues regarding #3 and #4 arise, to discuss possible explanations and solutions.

Strategy for data synthesis

Any statistical models used (one-stage or two-stage):

We will conduct a one-stage approach, accounting for stratification variables and time-varying randomisation ratios; as well as cluster-randomisation where applicable.

Whether a fixed or random effects model will be used:

Our initial analyses will use random intercepts, assuming that treatment effects are consistent across trials. We will then test random slope components to explore heterogeneity of treatment effect across trials.

What effect estimates will be calculated:

We will calculate between-group differences in disruptive child behavior at first assessment post-intervention.

What effect estimates will allow you to infer from your data:

Effects of the parenting programs on parental mental health, parenting behavior, and child mental health.

Methods for quantifying statistical heterogeneity (such as I^2 and t2):

We will use intra-cluster-correlation coefficients.

How missing data within the IPD will be dealt with:

We will use joint imputation to account for the multilevel structure of the data.

Analysis of subgroups or subsets

None planned.

Contact details for further information

Patty Leijten

p.leijten@uva.nl

Organisational affiliation of the review

University of Amsterdam

www.uva.nl

Review team members and their organisational affiliations

Dr Patty Leijten. University of Amsterdam

Professor Frances Gardner. University of Oxford

Ms Sophia Backhaus. University of Oxford

Professor G.J. Melendez-Torres. University of Exeter

Type and method of review

Individual patient data (IPD) meta-analysis, Systematic review

Anticipated or actual start date

01 November 2022

Anticipated completion date

31 December 2023

Funding sources/sponsors [1 change]

This project is funded by a Dutch Research Council (NWO) Vidi grant awarded to Dr. Leijten and grants from the ESRC Grand Union Doctoral Training Partnership and Clarendon Fund awarded to Ms. Backhaus.

The foundational project that this project builds on was funded by a grant from the National Institute for Health Research (NIHR) Public Health Research awarded to Professor Gardner (2013).

The funding sources have no role in the design and conduct of the study, preparation, review, or approval of any publications.

Grant number(s)

State the funder, grant or award number and the date of award

NWO VI.Vidi.201.065 (2021)

NIHR12-3070-04 (2013)

Conflicts of interest

Language

English

Country

England, Netherlands

Stage of review

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Child; European People; Family Characteristics; Follow-Up Studies; Humans; NSC 30705; Parenting; Parents; Randomized Controlled Trials as Topic

Date of registration in PROSPERO

12 December 2022

Date of first submission

24 October 2022

Details of any existing review of the same topic by the same authors

This project builds on:

Sophia Backhaus, Frances Gardner, Jamie M. Lachman, Patty Leijten, Wendy Knerr, G.J. Melendez-Torres. Unpacking parenting interventions - who benefits the most? A systematic review and meta-analysis on the effectiveness of parenting interventions. PROSPERO 2019 CRD42019141844 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42019141844

Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	Yes	No
Formal screening of search results against eligibility criteria	Yes	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

12 December 2022

Appendix 4.1. List of excluded instruments

Table S4.1. List of excluded instruments

Abbr.	Instrument full name	Source	Exclusion reason
AAPI-2	Adult Adolescent Parenting Inventory- Version 2	Child Maltreatment, Parenting intervention review, Experts	Attitudes not behaviours
Angry Outburst	/	Parenting review	No access; not validated instrument
APT	Analogue Parenting Task	Child maltreatment review	No clear item structure
CAPI	Child Abuse Potential Inventory	Parenting review, Experts	Attitudes and risks not behaviours
CNQ	Child Neglect Questionnaire	Child maltreatment review	Neglect measure
CNS-MM	Child Neglect Scales – Maternal Monitoring	Child maltreatment review	Neglect measure
/	Harsh punishment	Parenting review	No access; not validated instrument
/	Harsh discipline	Parenting review	No clear item structure
HOME-SF	HOME- Short Form	Expert	Mainly observation
/	Ideas about Parenting	Parenting review	No access
MCNS	Mother-Child Neglect Scale	Child maltreatment review	Neglect measure
MCNS-SF	Mother-Child Neglect Scale-Short Form	Child maltreatment review	Neglect measure
NPQ	Nijmengen Parenting Questionnaire	Parenting review	No access
PACBM	Parent's Attributions for Child's Behavior Measure	Parenting review	Attitudes not behaviours
PBI- Child report	Parent Behaviour Inventory	Experts	Not parent self-report
P-CAAM	Parent-Child Aggression Acceptability Movie Task	Child maltreatment review	No clear item structure
PDR	Parent Daily Report	Parenting review	No clear item structure
POQ	Parent Opinion Questionnaire	Child maltreatment review	Measures no harmful parenting behaviours
SBS-SV	Shaken Baby Syndrome awareness assessment- Short Version	Child maltreatment review	Baby measure

Appendix 4.2. Jaccard Index matrices

Figure S4.2a. Jaccard Index matrix for harsh parenting vs child maltreatment instruments - all behaviours

	APQ	BSI	CCMS	CCNES	CTS-ES	CTSPC	DDI	DHS/MICS	FM-CA	GPBS	HDPL	HS	ICAST-P/-T	IPPS	JVQ	PAFAS	PARQ	PBC	PBI	PPI	PPS	PQ	PRCM	PS	PSDQ
APQ	-	-	0.11	-	0.00	0.25	-	0.33	0.13	-	-	-	0.15	-	0.17	-	-	-	-	-	-	-	-	-	-
BSI	-	-	0.14	-	0.50	0.08	-	0.20	0.07	-	-	-	0.05	-	0.25	-	-	-	-	-	-	-	-	-	-
CCMS	0.11	0.14	-	0.00	-	-	0.33	-	-	0.25	0.45	0.25	-	0.14	-	0.25	0.33	0.10	0.57	0.11	0.22	0.22	0.22	0.33	0.30
CCNES	-	-	0.00	-	0.00	0.08	-	0.20	0.00	-	-	-	0.05	-	0.00	-	-	-	-	-	-	-	-	-	-
CTS-ES	0.00	0.50	-	0.00	-	-	0.00	-	-	0.00	0.22	0.00	-	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CTSPC	0.25	0.08	-	0.08	-	-	0.21	-	-	0.25	0.40	0.25	-	0.08	-	0.25	0.31	0.23	0.23	0.25	0.23	0.33	0.33	0.31	0.38
DDI	-	-	0.33	-	0.00	0.21	-	0.25	0.25	-	-	-	0.19	-	0.13	-	-	-	-	-	-	-	-	-	-
DHS/MICS	0.33	0.20	-	0.20	-	-	0.25	-	-	0.33	0.40	0.33	-	0.20	-	0.60	0.43	0.29	0.29	0.33	0.29	0.29	0.29	0.43	0.22
FM-CA	0.13	0.07	-	0.00	-	-	0.25	-	-	0.20	0.33	0.13	-	0.07	-	0.13	0.18	0.12	0.27	0.13	0.12	0.19	0.19	0.18	0.31
GPBS	-	-	0.25	-	0.00	0.25	-	0.33	0.20	-	-	-	0.15	-	0.17	-	-	-	-	-	-	-	-	-	-
HDPL	-	-	0.45	-	0.22	0.40	-	0.40	0.33	-	-	-	0.45	-	0.44	-	-	-	-	-	-	-	-	-	-
HS	-	-	0.25	-	0.00	0.25	-	0.33	0.13	-	-	-	0.15	-	0.17	-	-	-	-	-	-	-	-	-	-
ICAST-P/-T	0.15	0.05	-	0.05	-	-	0.19	-	-	0.15	0.45	0.15	-	0.05	-	0.15	0.25	0.20	0.14	0.15	0.20	0.20	0.20	0.19	0.18
IPPS	-	-	0.14	-	0.00	0.08	-	0.20	0.07	-	-	-	0.05	-	0.25	-	-	-	-	-	-	-	-	-	-
JVQ	0.17	0.25	-	0.00	-	-	0.13	-	-	0.17	0.44	0.17	-	0.25	-	0.40	0.29	0.14	0.33	0.17	0.14	0.14	0.14	0.29	0.11
PAFAS	-	-	0.25	-	0.00	0.25	-	0.60	0.13	-	-	-	0.15	-	0.40	-	-	-	-	-	-	-	-	-	-
PARQ	-	-	0.33	-	0.00	0.31	-	0.43	0.18	-	-	-	0.25	-	0.29	-	-	-	-	-	-	-	-	-	-
PBC	-	-	0.10	-	0.00	0.23	-	0.29	0.12	-	-	-	0.20	-	0.14	-	-	-	-	-	-	-	-	-	-
PBI	-	-	0.57	-	0.00	0.23	-	0.29	0.27	-	-	-	0.14	-	0.33	-	-	-	-	-	-	-	-	-	-
PPI	-	-	0.11	-	0.00	0.25	-	0.33	0.13	-	-	-	0.15	-	0.17	-	-	-	-	-	-	-	-	-	-
PPS	-	-	0.22	-	0.00	0.23	-	0.29	0.12	-	-	-	0.20	-	0.14	-	-	-	-	-	-	-	-	-	-
PQ	-	-	0.22	-	0.00	0.33	-	0.29	0.19	-	-	-	0.20	-	0.14	-	-	-	-	-	-	-	-	-	-
PRCM	-	-	0.22	-	0.00	0.33	-	0.29	0.19	-	-	-	0.20	-	0.14	-	-	-	-	-	-	-	-	-	-
PS	-	-	0.33	-	0.00	0.31	-	0.43	0.18	-	-	-	0.19	-	0.29	-	-	-	-	-	-	-	-	-	-
PSDQ	-	-	0.30	-	0.00	0.38	-	0.22	0.31	-	-	-	0.18	-	0.11	-	-	-	-	-	-	-	-	-	-
Overall	0.16	0.18	0.24	0.05	0.04	0.25	0.19	0.32	0.16	0.19	0.39	0.18	0.17	0.11	0.21	0.25	0.25	0.15	0.26	0.16	0.17	0.20	0.20	0.25	0.22

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.2b. Jaccard Index matrix for harsh parenting vs child maltreatment instruments - physical behaviours

	APQ	BSI	CCMS	CTS-ES	CTSPC	DDI	DHS/MICS	FM-CA	GPBS	HDPL	HS	ICAST-P/T	IPPS	JVQ	PAFAS	PARQ	PBC	PBI	PPI	PPS	PQ	PRCM	PS	PSDQ
APQ	-	-	0.17	0.00	0.25	-	0.25	0.15	-	-	-	0.13	-	0.25	-	-	-	-	-	-	-	-	-	-
BSI	-	-	0.20	0.50	0.13	-	0.33	0.08	-	-	-	0.07	-	0.33	-	-	-	-	-	-	-	-	-	-
CCMS	0.17	0.20	-	-	-	0.43	-	-	0.33	0.38	0.20	-	0.20	-	0.20	0.20	0.17	0.40	0.17	0.20	0.17	0.17	0.40	0.29
CTS-ES	0.00	0.50	-	-	-	0.00	-	-	0.00	0.33	0.00	-	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CTSPC	0.25	0.13	-	-	-	0.30	-	-	0.38	0.27	0.13	-	0.13	-	0.13	0.13	0.25	0.11	0.25	0.13	0.25	0.25	0.11	0.33
DDI	-	-	0.43	0.00	0.30	-	0.33	0.29	-	-	-	0.25	-	0.14	-	-	-	-	-	-	-	-	-	-
DHS/MICS	0.25	0.33	-	-	-	0.33	-	-	0.50	0.29	0.33	-	0.33	-	0.33	0.33	0.25	0.25	0.25	0.33	0.25	0.25	0.25	0.17
FM-CA	0.15	0.08	-	-	-	0.29	-	-	0.23	0.27	0.08	-	0.08	-	0.08	0.08	0.15	0.15	0.15	0.08	0.15	0.15	0.15	0.31
GPBS	-	-	0.33	0.00	0.38	-	0.50	0.23	0.00	-	-	0.20	-	0.20	-	-	-	-	-	-	-	-	-	-
HDPL	-	-	0.38	0.33	0.27	-	0.29	0.27	-	-	-	0.40	-	0.50	-	-	-	-	-	-	-	-	-	-
HS	-	-	0.20	0.00	0.13	-	0.33	0.08	-	-	-	0.07	-	0.33	-	-	-	-	-	-	-	-	-	-
ICAST-P/T	0.13	0.07	-	-	-	0.25	-	-	0.20	0.40	0.07	-	0.07	-	0.07	0.07	0.13	0.06	0.13	0.07	0.13	0.13	0.06	0.12
IPPS	-	-	0.20	0.00	0.13	-	0.33	0.08	-	-	-	0.07	-	0.33	-	-	-	-	-	-	-	-	-	-
JVQ	0.25	0.33	-	-	-	0.14	-	-	0.20	0.50	0.33	-	0.33	-	0.33	0.33	0.25	0.25	0.25	0.33	0.25	0.25	0.25	0.17
PAFAS	-	-	0.20	0.00	0.13	-	0.33	0.08	-	-	-	0.07	-	0.33	-	-	-	-	-	-	-	-	-	-
PARQ	-	-	0.20	0.00	0.13	-	0.33	0.08	-	-	-	0.07	-	0.33	-	-	-	-	-	-	-	-	-	-
PBC	-	-	0.17	0.00	0.25	-	0.25	0.15	-	-	-	0.13	-	0.25	-	-	-	-	-	-	-	-	-	-
PBI	-	-	0.40	0.00	0.11	-	0.25	0.15	-	-	-	0.06	-	0.25	-	-	-	-	-	-	-	-	-	-
PPI	-	-	0.17	0.00	0.25	-	0.25	0.15	-	-	-	0.13	-	0.25	-	-	-	-	-	-	-	-	-	-
PPS	-	-	0.20	0.00	0.13	-	0.33	0.08	-	-	-	0.07	-	0.33	-	-	-	-	-	-	-	-	-	-
PQ	-	-	0.17	0.00	0.25	-	0.25	0.15	-	-	-	0.13	-	0.25	-	-	-	-	-	-	-	-	-	-
PRCM	-	-	0.17	0.00	0.25	-	0.25	0.15	-	-	-	0.13	-	0.25	-	-	-	-	-	-	-	-	-	-
PS	-	-	0.40	0.00	0.11	-	0.25	0.15	-	-	-	0.06	-	0.25	-	-	-	-	-	-	-	-	-	-
PSDQ	-	-	0.29	0.00	0.33	-	0.17	0.31	-	-	-	0.12	-	0.17	-	-	-	-	-	-	-	-	-	-
Overall	0.17	0.23	0.25	0.05	0.21	0.25	0.30	0.15	0.23	0.35	0.16	0.13	0.16	0.28	0.16	0.16	0.17	0.18	0.17	0.16	0.17	0.17	0.18	0.20

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.2c. Jaccard Index matrix for harsh parenting vs child maltreatment instruments - emotional behaviours

	APQ	CCMS	CCNES	CTSPC	DDI	DHS/MICS	FM-CA	HDPL	HS	ICAST-P/T	JVQ	PAFAS	PARQ	PBC	PBI	PPI	PPS	PQ	PRCM	PS	PSDQ
APQ	-	0.00	-	0.25	-	0.50	0.00	-	-	0.20	0.00	-	-	-	-	-	-	-	-	-	-
CCMS	0.00	-	0.00	-	0.25	-	-	0.67	0.33	-	-	0.33	0.50	0.00	1.00	0.00	0.25	0.33	0.33	0.25	0.33
CCNES	-	0.00	-	0.25	-	0.50	0.00	-	-	0.20	0.00	-	-	-	-	-	-	-	-	-	-
CTSPC	0.25	-	0.25	-	0.40	-	-	0.75	0.50	-	-	0.50	0.60	0.20	0.50	0.25	0.40	0.50	0.50	0.75	0.50
DDI	-	0.25	-	0.40	-	0.67	0.25	-	-	0.60	0.33	-	-	-	-	-	-	-	-	-	-
DHS/MICS	0.50	-	0.50	-	0.67	-	-	0.67	0.33	-	-	1.00	0.50	0.33	0.33	0.50	0.25	0.33	0.33	0.67	0.33
FM-CA	0.00	-	0.00	-	0.25	-	-	0.67	0.33	-	-	0.33	0.50	0.00	1.00	0.00	0.25	0.33	0.33	0.25	0.33
HDPL	-	0.67	-	0.75	-	0.67	0.67	-	-	0.60	0.33	-	-	-	-	-	-	-	-	-	-
HS	-	0.33	-	0.50	-	0.33	0.33	-	-	0.40	0.00	-	-	-	-	-	-	-	-	-	-
ICAST-P/T	0.20	-	0.20	-	0.60	-	-	0.60	0.40	-	-	0.40	0.80	0.40	0.40	0.20	0.60	0.40	0.40	0.60	0.40
JVQ	0.00	-	0.00	-	0.33	-	-	0.33	0.00	-	-	0.50	0.25	0.00	0.50	0.00	0.00	0.00	0.00	0.33	0.00
PAFAS	-	0.33	-	0.50	-	1.00	0.33	-	-	0.40	0.50	-	-	-	-	-	-	-	-	-	-
PARQ	-	0.50	-	0.60	-	0.50	0.50	-	-	0.80	0.25	-	-	-	-	-	-	-	-	-	-
PBC	-	0.00	-	0.20	-	0.33	0.00	-	-	0.40	0.00	-	-	-	-	-	-	-	-	-	-
PBI	-	1.00	-	0.50	-	0.33	1.00	-	-	0.40	0.50	-	-	-	-	-	-	-	-	-	-
PPI	-	0.00	-	0.25	-	0.50	0.00	-	-	0.20	0.00	-	-	-	-	-	-	-	-	-	-
PPS	-	0.25	-	0.40	-	0.25	0.25	-	-	0.60	0.00	-	-	-	-	-	-	-	-	-	-
PQ	-	0.33	-	0.50	-	0.33	0.33	-	-	0.40	0.00	-	-	-	-	-	-	-	-	-	-
PRCM	-	0.33	-	0.50	-	0.33	0.33	-	-	0.40	0.00	-	-	-	-	-	-	-	-	-	-
PS	-	0.25	-	0.75	-	0.67	0.25	-	-	0.60	0.33	-	-	-	-	-	-	-	-	-	-
PSDQ	-	0.33	-	0.50	-	0.33	0.33	-	-	0.40	0.00	-	-	-	-	-	-	-	-	-	-
Overall	**0.16**	**0.31**	**0.16**	**0.46**	**0.42**	**0.48**	**0.31**	**0.61**	**0.32**	**0.44**	**0.15**	**0.51**	**0.53**	**0.16**	**0.62**	**0.16**	**0.29**	**0.32**	**0.32**	**0.48**	**0.32**

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.3a. Jaccard Index matrix for child maltreatment instruments - all behaviours

	CCMS	CTS-ES	CTSPC	DHS/MICS	FM-CA	ICAST-P/-T	JVQ
CCMS	/	0.29	0.36	0.50	0.47	0.29	0.57
CTS-ES	0.29	/	0.08	0.17	0.13	0.10	0.50
CTSPC	0.36	0.08	/	0.42	0.59	0.52	0.23
DHS/MICS	0.50	0.17	0.42	/	0.25	0.25	0.50
FM-CA	0.47	0.13	0.59	0.25	/	0.59	0.27
ICAST-P/-T	0.29	0.10	0.52	0.25	0.59	/	0.20
JVQ	0.57	0.50	0.23	0.50	0.27	0.20	/
Overall	**0.41**	**0.21**	**0.37**	**0.35**	**0.38**	**0.32**	**0.38**

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.3b. Jaccard Index matrix for child maltreatment instruments - physical behaviours

	CCMS	CTS-ES	CTSPC	DHS/MICS	FM-CA	ICAST-P/T	JVQ
CCMS	/	0.40	0.30	0.60	0.38	0.25	0.60
CTS-ES	0.40	/	0.11	0.25	0.15	0.13	0.67
CTSPC	0.30	0.11	/	0.38	0.62	0.44	0.22
DHS/MICS	0.60	0.25	0.38	/	0.23	0.20	0.50
FM-CA	0.38	0.15	0.62	0.23	/	0.65	0.23
ICAST-P/T	0.25	0.13	0.44	0.20	0.65	/	0.20
JVQ	0.60	0.67	0.22	0.50	0.23	0.20	/
Overall	**0.42**	**0.29**	**0.34**	**0.36**	**0.38**	**0.31**	**0.40**

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.3c. Jaccard Index matrix for child maltreatment instruments - emotional behaviours

	CCMS	CTSPC	DHS/MICS	FM-CA	ICAST-P/T	JVQ
CCMS	/	0.50	0.33	1.00	0.40	0.50
CTSPC	0.50	/	0.50	0.50	0.80	0.25
DHS/MICS	0.33	0.50	/	0.33	0.40	0.50
FM-CA	1.00	0.50	0.33	/	0.40	0.50
ICAST-P/T	0.40	0.80	0.40	0.40	/	0.20
JVQ	0.50	0.25	0.50	0.50	0.20	/
Overall	**0.55**	**0.51**	**0.41**	**0.55**	**0.44**	**0.39**

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.4a. Jaccard Index matrix for harsh parenting instruments - all behaviours

	APQ	BSI	CCNES	DDI	GPBS	HDPL	HS	IPPS	PAFAS	PARQ	PBC	PBI	PPI	PPS	PQ	PRCM	PS	PSDQ
APQ	/	0.00	0.33	0.33	0.50	0.20	0.50	0.33	0.50	0.33	0.75	0.17	1.00	0.40	0.75	0.75	0.33	0.50
BSI	0.00	/	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CCNES	0.33	0.00	/	0.00	0.00	0.11	0.33	0.00	0.33	0.20	0.25	0.00	0.33	0.25	0.25	0.25	0.20	0.17
DDI	0.33	0.00	0.00	/	0.60	0.08	0.14	0.20	0.14	0.11	0.29	0.29	0.33	0.13	0.29	0.29	0.25	0.38
GPBS	0.50	0.00	0.00	0.60	/	0.09	0.20	0.33	0.20	0.14	0.40	0.17	0.50	0.17	0.40	0.40	0.14	0.29
HDPL	0.20	0.11	0.11	0.08	0.09	/	0.33	0.11	0.33	0.40	0.18	0.30	0.20	0.30	0.30	0.30	0.27	0.25
HS	0.50	0.00	0.33	0.14	0.20	0.33	/	0.33	0.50	0.60	0.40	0.40	0.50	0.75	0.75	0.75	0.33	0.50
IPPS	0.33	0.00	0.00	0.20	0.33	0.11	0.33	/	0.33	0.20	0.25	0.25	0.33	0.25	0.25	0.25	0.20	0.17
PAFAS	0.50	0.00	0.33	0.14	0.20	0.33	0.50	0.33	/	0.60	0.40	0.40	0.50	0.40	0.40	0.40	0.60	0.29
PARQ	0.33	0.00	0.20	0.11	0.14	0.40	0.60	0.20	0.60	/	0.50	0.50	0.33	0.80	0.50	0.50	0.43	0.38
PBC	0.75	0.00	0.25	0.29	0.40	0.18	0.40	0.25	0.40	0.50	/	0.14	0.75	0.60	0.60	0.60	0.29	0.43
PBI	0.17	0.00	0.00	0.29	0.17	0.30	0.40	0.25	0.40	0.50	0.14	/	0.17	0.33	0.33	0.33	0.50	0.43
PPI	1.00	0.00	0.33	0.33	0.50	0.20	0.50	0.33	0.50	0.33	0.75	0.17	/	0.40	0.75	0.75	0.33	0.50
PPS	0.40	0.00	0.25	0.13	0.17	0.30	0.75	0.25	0.40	0.80	0.60	0.33	0.40	/	0.60	0.60	0.29	0.43
PQ	0.75	0.00	0.25	0.29	0.40	0.30	0.75	0.25	0.40	0.50	0.60	0.33	0.75	0.60	/	1.00	0.29	0.67
PRCM	0.75	0.00	0.25	0.29	0.40	0.30	0.75	0.25	0.40	0.50	0.60	0.33	0.75	0.60	1.00	/	0.29	0.67
PS	0.33	0.00	0.20	0.25	0.14	0.27	0.33	0.20	0.60	0.43	0.29	0.50	0.33	0.29	0.29	0.29	/	0.38
PSDQ	0.50	0.00	0.17	0.38	0.29	0.25	0.50	0.17	0.29	0.38	0.43	0.43	0.50	0.43	0.67	0.67	0.38	/
Overall	**0.45**	**0.01**	**0.18**	**0.23**	**0.27**	**0.23**	**0.43**	**0.22**	**0.37**	**0.38**	**0.40**	**0.28**	**0.45**	**0.39**	**0.48**	**0.48**	**0.30**	**0.38**

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.4b. Jaccard Index matrix for harsh parenting instruments - physical behaviours

	APQ	BSI	DDI	GPBS	HDPL	HS	IPPS	PAFAS	PARQ	PBC	PBI	PPI	PPS	PQ	PRCM	PS	PSDQ
APQ	/	0.00	0.40	0.67	0.14	0.50	0.50	0.50	0.50	1.00	0.33	1.00	0.50	1.00	1.00	0.33	0.50
BSI	0.00	/	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DDI	0.40	0.00	/	0.60	0.10	0.20	0.20	0.20	0.20	0.40	0.40	0.40	0.20	0.40	0.40	0.40	0.40
GPBS	0.67	0.00	0.60	/	0.13	0.33	0.33	0.33	0.33	0.67	0.25	0.67	0.33	0.67	0.67	0.25	0.40
HDPL	0.14	0.17	0.10	0.13	/	0.17	0.17	0.17	0.17	0.14	0.14	0.14	0.17	0.14	0.14	0.14	0.11
HS	0.50	0.00	0.20	0.33	0.17	/	1.00	1.00	1.00	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.25
IPPS	0.50	0.00	0.20	0.33	0.17	1.00	/	1.00	1.00	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.25
PAFAS	0.50	0.00	0.20	0.33	0.17	1.00	1.00	/	1.00	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.25
PARQ	0.50	0.00	0.20	0.33	0.17	1.00	1.00	1.00	/	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.25
PBC	1.00	0.00	0.40	0.67	0.14	0.50	0.50	0.50	0.50	/	0.33	1.00	0.50	1.00	1.00	0.33	0.50
PBI	0.33	0.00	0.40	0.25	0.14	0.50	0.50	0.50	0.50	0.33	/	0.33	0.50	0.33	0.33	1.00	0.50
PPI	1.00	0.00	0.40	0.67	0.14	0.50	0.50	0.50	0.50	1.00	0.33	/	0.50	1.00	1.00	0.33	0.50
PPS	0.50	0.00	0.20	0.33	0.17	1.00	1.00	1.00	1.00	0.50	0.50	0.50	/	0.50	0.50	0.50	0.25
PQ	1.00	0.00	0.40	0.67	0.14	0.50	0.50	0.50	0.50	1.00	0.33	1.00	0.50	/	1.00	0.33	0.50
PRCM	1.00	0.00	0.40	0.67	0.14	0.50	0.50	0.50	0.50	1.00	0.33	1.00	0.50	1.00	/	0.33	0.33
PS	0.33	0.00	0.40	0.25	0.14	0.50	0.50	0.50	0.50	0.33	1.00	0.33	0.50	0.33	0.33	/	0.50
PSDQ	0.50	0.00	0.50	0.40	0.11	0.25	0.33	0.25	0.25	0.50	0.50	0.50	0.25	0.50	0.50	0.50	/
Overall	0.52	0.01	0.29	0.39	0.14	0.56	0.50	0.50	0.50	0.52	0.38	0.52	0.50	0.52	0.52	0.38	0.34

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Figure S4.4c. Jaccard Index matrix for harsh parenting instruments - emotional behaviours

	APQ	CCNES	DDI	HDPL	HS	PAFAS	PARQ	PBC	PBI	PPI	PPS	PQ	PRCM	PS	PSDQ
APQ	/	1.00	0.33	0.33	0.50	0.50	0.25	0.50	0.00	1.00	0.33	0.50	0.50	0.33	0.50
CCNES	1.00	/	0.33	0.33	0.50	0.50	0.25	0.50	0.00	1.00	0.33	0.50	0.50	0.33	0.50
DDI	0.33	0.33	/	0.50	0.25	0.67	0.75	0.67	0.25	0.33	0.50	0.25	0.25	0.50	0.25
HDPL	0.33	0.33	0.50	/	0.67	0.67	0.75	0.25	0.67	0.33	0.50	0.67	0.67	0.50	0.67
HS	0.50	0.50	0.25	0.67	/	0.33	0.50	0.33	0.33	0.50	0.67	1.00	1.00	0.25	1.00
PAFAS	0.50	0.50	0.67	0.67	0.33	/	0.50	0.33	0.33	0.50	0.25	0.33	0.33	0.67	0.33
PARQ	0.25	0.25	0.75	0.75	0.50	0.50	/	0.50	0.50	0.25	0.75	0.50	0.50	0.40	0.50
PBC	0.50	0.50	0.67	0.25	0.33	0.33	0.50	/	0.00	0.50	0.67	0.33	0.33	0.25	0.33
PBI	0.00	0.00	0.25	0.67	0.33	0.33	0.50	0.00	/	0.00	0.25	0.33	0.33	0.25	0.33
PPI	1.00	1.00	0.33	0.33	0.50	0.50	0.25	0.50	0.00	/	0.33	0.50	0.50	0.33	0.50
PPS	0.33	0.33	0.50	0.50	0.67	0.25	0.75	0.67	0.25	0.33	/	0.67	0.67	0.20	0.67
PQ	0.50	0.50	0.25	0.67	1.00	0.33	0.50	0.33	0.33	0.50	0.67	/	1.00	0.25	1.00
PRCM	0.50	0.50	0.25	0.67	1.00	0.33	0.50	0.33	0.33	0.50	0.67	1.00	/	0.25	1.00
PS	0.33	0.33	0.50	0.50	0.25	0.67	0.40	0.25	0.25	0.33	0.20	0.25	0.25	/	0.25
PSDQ	0.50	0.50	0.25	0.67	1.00	0.33	0.50	0.33	0.33	0.50	0.67	1.00	1.00	0.25	/
Overall	0.47	0.47	0.42	0.54	0.56	0.45	0.49	0.39	0.26	0.47	0.48	0.56	0.56	0.34	0.56

* Colour-coding: red = very weak Jaccard Index (0.00 - 0.19), orange = weak Jaccard Index (0.20 - 0.39), yellow = moderate Jaccard Index (0.40-0.59), light green = strong Jaccard Index (0.60 - 0.79), dark green = very strong Jaccard Index (0.80 - 1.0).

Appendix 5.1 Detailed eligibility criteria

Table S5.1. Eligibility criteria for inclusion

Domain	**Inclusion criteria**	**Exclusion criteria**
Population	Parents and other caregivers of children with a mean age between 2 and 10 years. If studies did not report the mean value, two steps were taken: a. contacting the author(s) to ask for the mean age; b. if the observed mean value remained unclear, a theoretical mean was calculated by using the minimum and maximum age value and dividing it by two.	We exclude trials specifically aimed at special groups such as physical, learning or developmental disabilities, children with severe mental illness (ADHD is included, as long as the study explicitly focused on reducing conduct problems), and children in temporary foster care. We exclude adults providing care to children in institutional settings.
Intervention	Parenting intervention with at least 50% of sessions or content directed at parents. The intervention has a clear theoretical foundation largely comprising social learning theory principles. Social learning theory posits that children develop disruptive behaviour when parents unwittingly reward disruptive behaviour instead of positive behaviour, and when parents model aversive behaviour. Interventions based on social learning theory teach parents behaviour management skills such as setting clear rules, using positive reinforcement and preventing negative reinforcement, and finding alternatives to harsh and abusive parenting. We used the following steps to ensure that an intervention is based on social learning theoretical principles: 1. We read the intervention description of the trial paper and searched for terms such as social learning or coercive parent-child interactions. 2. We searched for additional publications by the intervention developer that describe the intervention. 3. We retrieved the manuals of the interventions and checked the components. At least 50% of the components had to focus on redirecting child behaviours through differential attention or parental modelling of non-violent behaviours (for example: using time-out, praise, rewards, rule setting, ignoring, modelling);	We exclude interventions that focus mainly (more than 50% of sessions or content) on specific aspects of parenting, such as toileting, sexual health, feeding or HIV prevention, rather than teaching general parenting skills. In addition, we exclude interventions which: a. focus narrowly on very specific child risks such as poisoning or accidents, or which teach skills for dealing with specific medical conditions or physical disabilities, such as asthma, epilepsy, HIV, psychosis, autism, Down Syndrome or severe learning disabilities; b. primarily deliver financial, social or other support to parents but do not aim to change parents' knowledge or behaviour (e.g. conditional cash transfer programs, unless they include a parent training component, the effects of which can be analysed separately from other components).

	4. We searched for policy briefs or other online resources that describe the intervention	
Comparator	Inactive control groups (no treatment, waiting list, minimal intervention, treatment as usual)	We exclude studies/study arms with an active condition such as a variant of the same parenting intervention, a different parenting intervention or an alternative intervention.
Outcomes	This systematic review aimed to answer effectiveness of parenting interventions on a range of outcomes. For this study, we include measures that use systematic direct observational techniques, instruments that rely on self-report and, if available, official reports of maltreatment. At least 50% of items of a subscale or instrument needed to include physically or emotionally violent parenting behaviours. For observational measures, coding example needed to clearly indicate emotional or physical violence. This outcome was renamed to physical and emotional violence (see online protocol).	We excluded outcomes that included any other form of violence including neglect, and instruments that had less than 50% of violent items.
Study design	Randomised controlled trials and cluster-randomised controlled trials	

Appendix 5.2 GRADE rating

Table S5.2. Detailed GRADE rating

Author(s): Backhaus S, Leijten P, Jochim J, Melendez-Torres, G.J., Gardner F.
Question: How effective are parenting interventions based on social learning theory for parents and caregivers of children aged 2 to 10 years compared to an inactive control condition for reducing emotional and physical violence?
Setting: Global

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Parenting intervention	Inactive control group	Relative (95% CI)	Absolute (95% CI)		
Immediate effects												
42	randomised trials	serious[a]	not serious	not serious	not serious	none	2388	2062	–	SMD **0·46 lower** (0·59 lower to 0·33lower)	⨁⨁⨁◯ Moderate	CRITICAL
1–6 months effects												
18	randomised trials	very serious[b]	not serious	not serious	not serious	none	1901	1703	–	SMD **0·24 lower** (0·37 lower to 0·11 lower)	⨁⨁◯◯ Low	CRITICAL
7–24 months effects												
12	randomised trials	serious[c]	not serious	not serious	not serious	publication bias strongly suspected[d]	1264	1135	–	SMD **0·18 lower** (0·34 lower to 0·02 lower)	⨁⨁◯◯ Low	CRITICAL

CI: confidence interval; **SMD:** standardized mean difference

Explanations: a. Majority of studies in the body of evidence at a high risk of bias largely due to unclear risks for key domains.; b. Majority of studies in the body of evidence at a high risk of bias largely due to high risk of blinding of outcome assessors which was not a key domain, and high risk of bias for selected outcome reporting; c. Majority of studies in the body of evidence at a high risk of bias largely due to high risk of blinding of outcome assessors which was not a key domain.; d. Small trials in the body of evidence report no effects in the opposite direction.

Appendix 5.3 Funnel plots

Figure S5.1. Funnel plot of intervention studies with effects on physical and emotional violence at immediate post-test

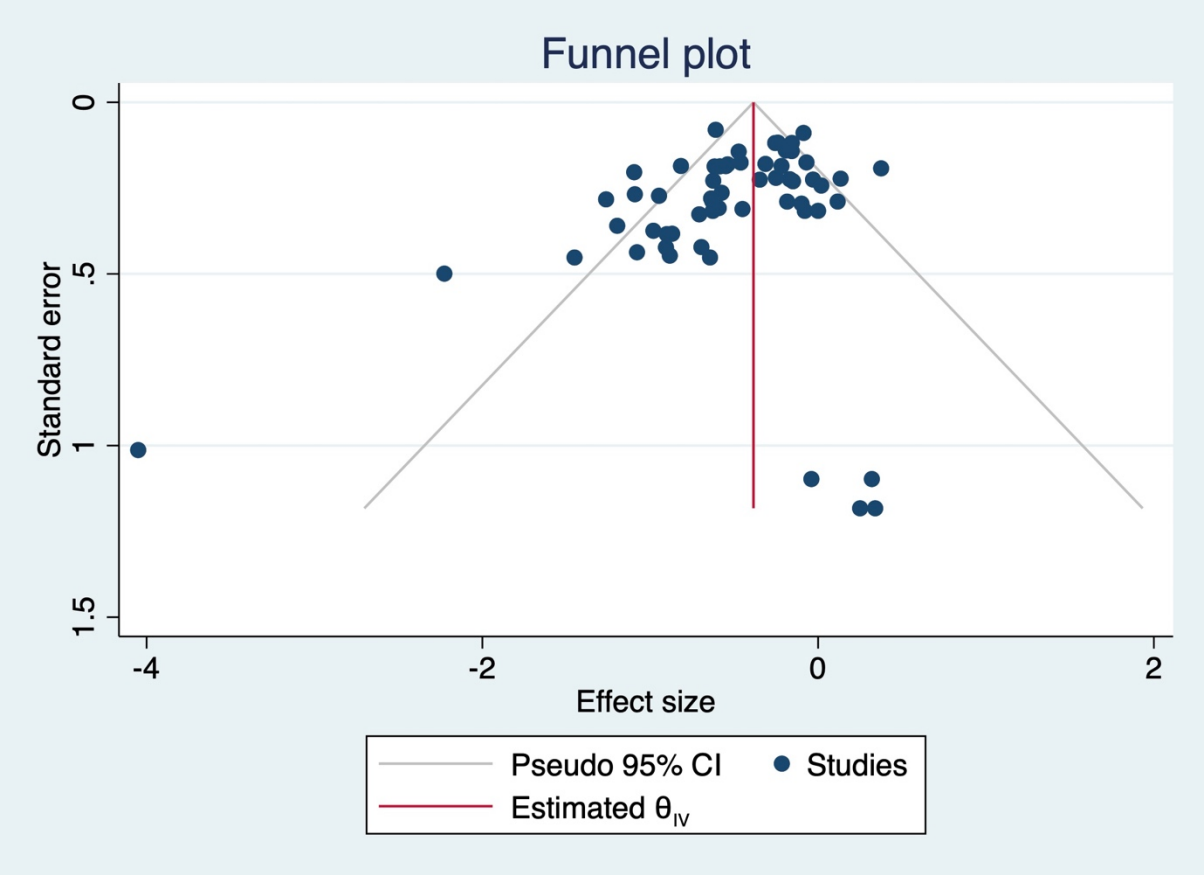


Figure S5.2. Funnel plot of intervention studies with effects on physical and emotional violence at 1–6 months follow-up

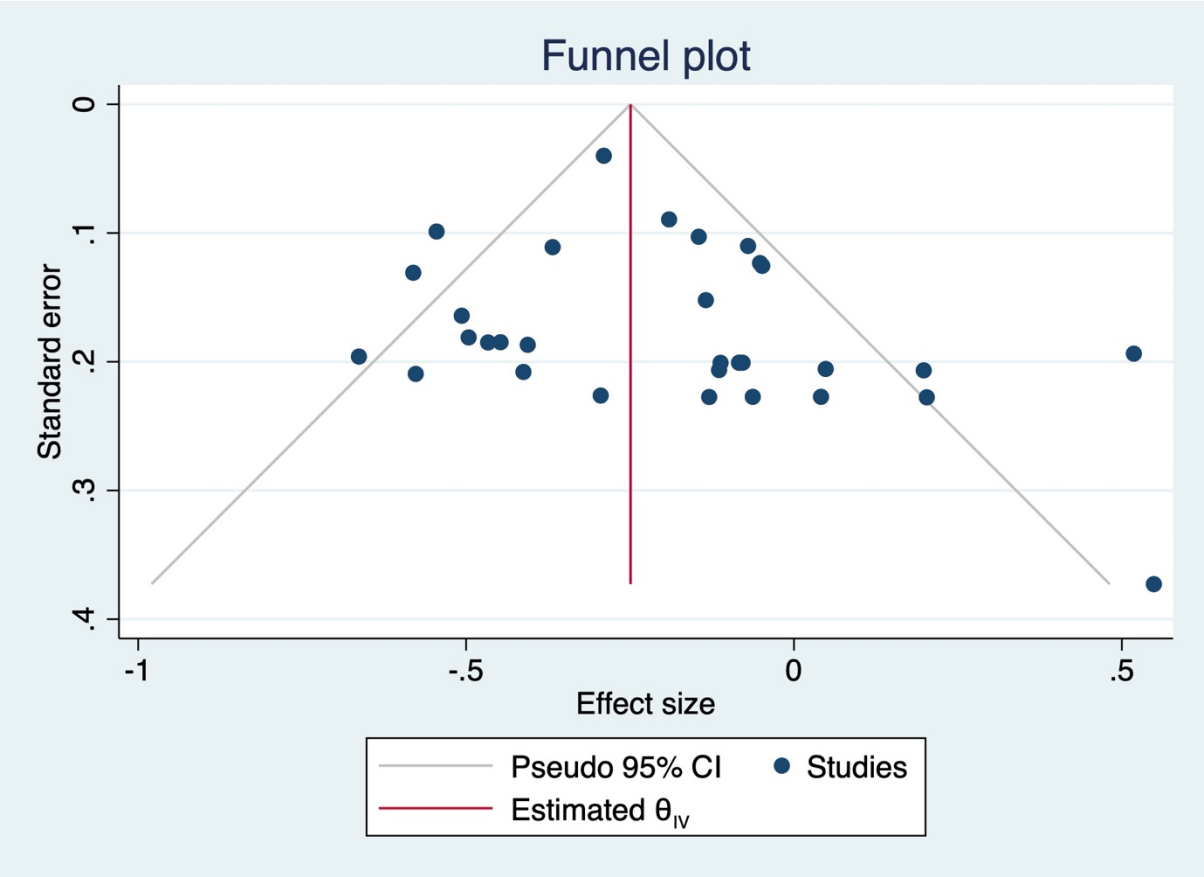
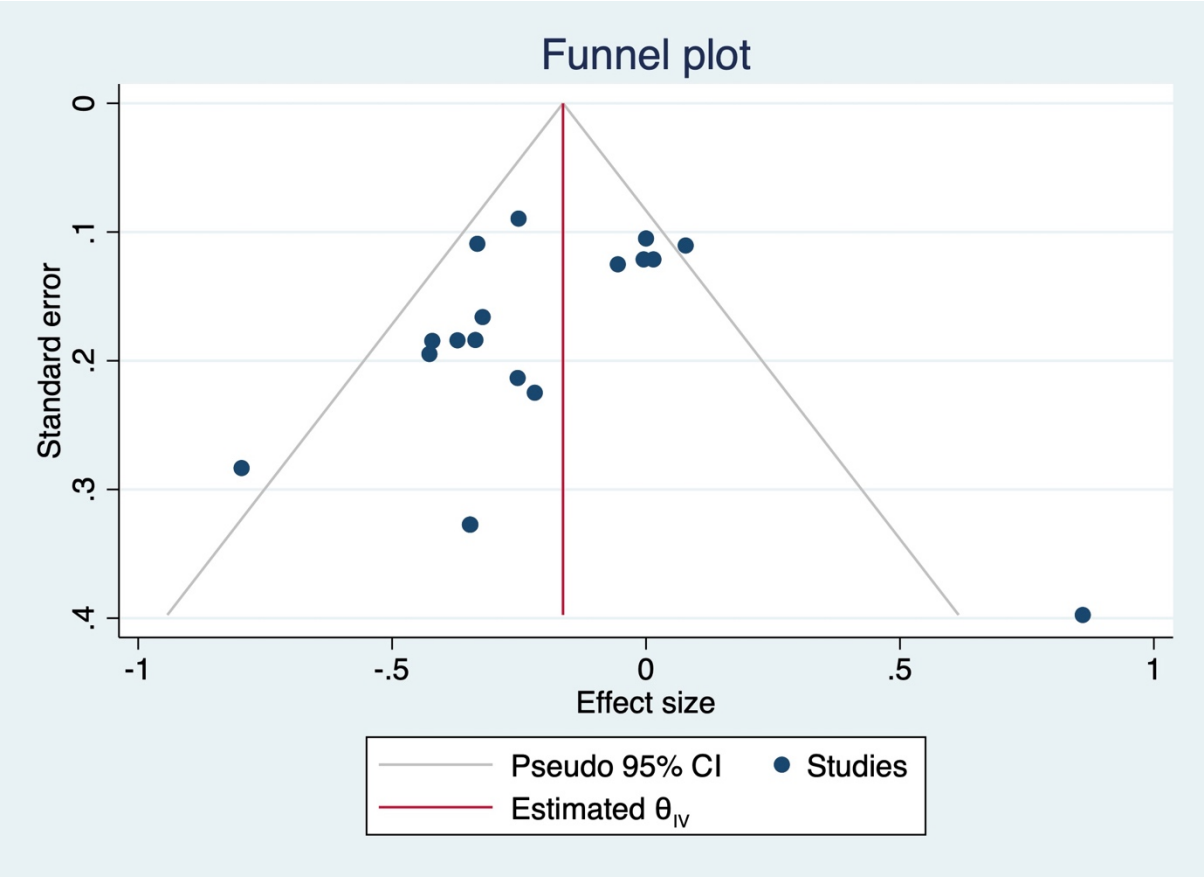
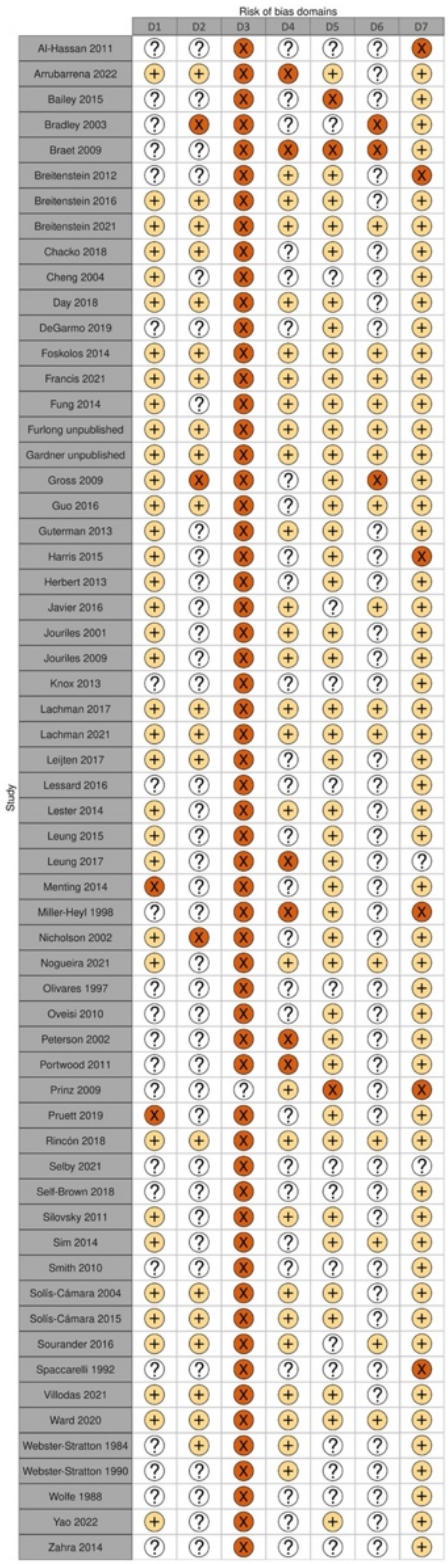


Figure S5.3. Funnel plot of intervention studies with effects on physical and emotional violence at 7–24 months follow-up



Appendix 5.4 Detailed risk of bias assessment

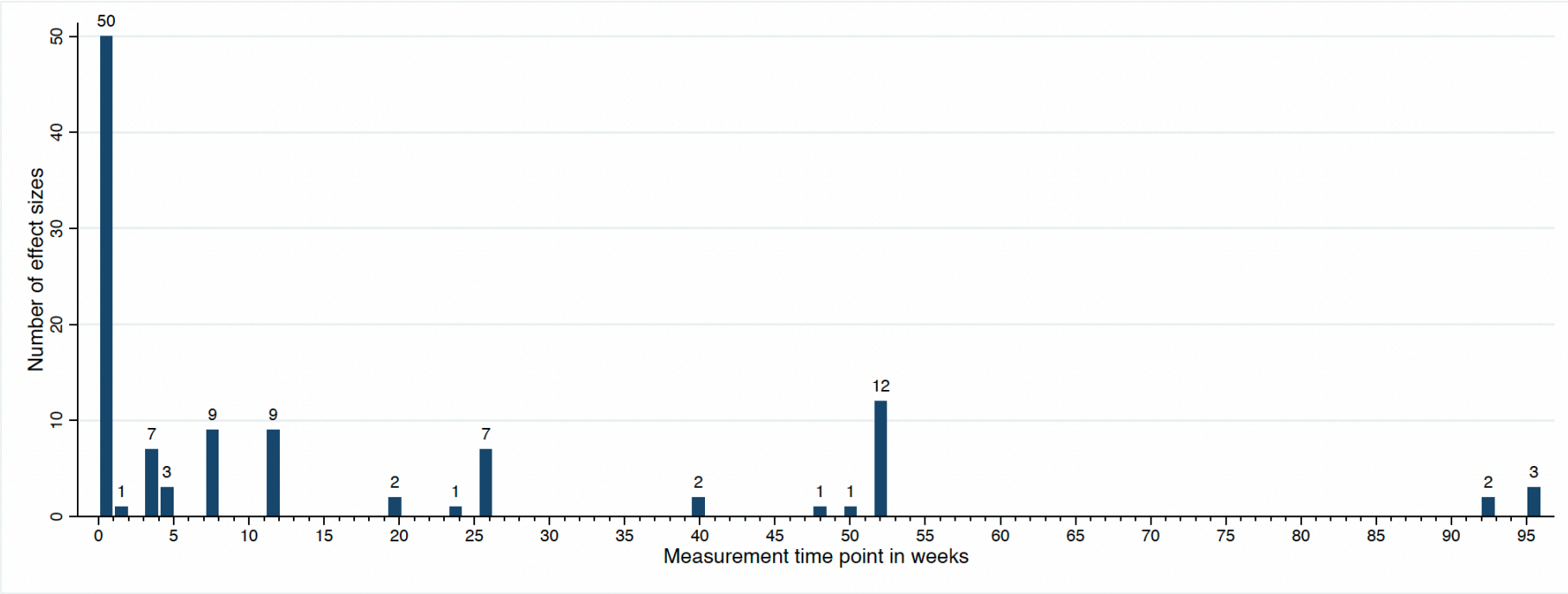
Figure S5.4. Detailed risk of bias assessment



D1= Sequence allocation, D2 = Allocation concealment, D3 = Blinding of participants, D4= Blinding of outcome assessors, D5 = Incomplete data assessment, D6 = Selected outcome reporting, D7 = Other bias;
⊕ = Low risk ; ? = Unclear risk; ⊗ = High risk

Appendix 5.5 Number of effect sizes by time point

Figure S5.5. Histogram of number of effect sizes by measurement time point



Appendix 5.6 PRISMA Checklist



PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 134
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Page 135
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Pages 138-140
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 140
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Pages 142-143 & Appendix 5.1
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Pages 141-142
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Appendix 5.7 & 6.1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Pages 141-142
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 143
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 142 and Appendix 5.1
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 143

Section and Topic	Item #	Checklist item	Location where item is reported
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 143
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Pages 143-144
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 144
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Page 144
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Page 144
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Pages 143-144
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 144
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Pages 158-161
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 144
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 144
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Figure 5.1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	-
Study characteristics	17	Cite each included study and present its characteristics.	Tables 5.1& 5.2
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Appendix 5.4
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Figures 5.3-5
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Table 5.3 & Table S5.2
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Table 5.3

Section and Topic	Item #	Checklist item	Location where item is reported
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Pages 158-161
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Pages 158-161
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Funnel plots Figures S5.1-3
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Table 5.3 & Table S5.2.
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Pages 161-163
	23b	Discuss any limitations of the evidence included in the review.	Pages 163-164
	23c	Discuss any limitations of the review processes used.	Pages 163-164
	23d	Discuss implications of the results for practice, policy, and future research.	Pages 136, 164
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Pages 135, 141, 144
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Pages 135, 141, 144
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Table S5.1
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 145
Competing interests	26	Declare any competing interests of review authors.	In Publication
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	In Publication

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Appendix 5.7 Search strategy

We took the following essential concepts of the inclusion criteria to develop the search string. These terms were combined using Boolean logic ("or", "and"). Four conceptual categories with relevant terms were used: 1) intervention, 2) parenting (including abuse), 3) child behavioural and emotional problems, 4) we did not use a term for RCT, as there is evidence that too many RCTs are missed by employing terms for the study design (Higgins & Green, 2008).

As an example, the search terms for MEDLINE:

1. ((parent$ or famil$) adj (program$ or intervention$ or training or education or group)).tw.
2. behavior therapy/ or cognitive therapy/
3. (behavio#r adj3 (train$ or intervention$ or therap$ or program$)).tw.
4. (cbt or cognitive behavio#ral therapy).tw.
5. (cognitive adj3 (therap$ or intervention$ or train$ or program$)).tw.
6. (triple p or positive parenting program).ti,ab,kw.
7. incredible years.ti,ab,kw.
8. PCIT.mp. or (Parent-child adj interaction adj therap$).ti,ab,kw. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
9. PMT.mp. or (parent adj management adj training).ti,ab,kw. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
10. (family adj check-up).ti,ab,kw.
11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10

12. conduct disorder$.mp.

13. (oppositional adj3 (defiant$ or disorder$)).mp.

14. (conduct adj3 (difficult$ or disorder$ or problem$)).mp.

15. (behavio#ral adj3 (problem$ or difficult$ or disorder$)).mp.

16. aggressive behavio#r$.mp.

17. (emotional adj1 behavio#ral problem$).mp.

18. (child$ adj3 behavio#r$ disorder$).mp.

19. social behavio#r disorder$.mp.

20. ((antisocial or externali$ or internali$ or disruptive) adj (behavio#r or problem$ or difficult$)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

21. ((child adj abus$) or maltreat$ or (psychological adj aggression) or neglect or (corporal adj punish$)).mp.

22. ((exp parenting skills/ or exp disciplin$/ or exp emotio$/) adj regulation/) or exp warmth/ or parenting/ or exp Mother Child Communica$/ or exp Child Disciplin$/ or exp Father Child Relation$/ or exp Mother Child Relation$/ or exp Parent Child Relation$/ or exp Parent Child Communicati$/ or exp Father Child Communicat$/ or exp child parent relation$/ or exp child rearing/ or exp family functioning/ or exp family conflict/ or exp maternal behavio#r/ or exp paternal behavio#r/

23. 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22

24. 11 and 23

25. limit 24 to yr="2014 -Current"

Appendix 6.1 Databases

We searched in the following databases:

- 3ie Database of Impact evaluations,
- ASSIA,
- Campbell Library,
- The Cochrane Library (Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials),
- EMBASE,
- ERIC,
- MEDLINE,
- National Criminal Justice Reference Service,
- The International Bibliography of the Social Sciences,
- PsycINFO,
- PILOTS;

and the following trial registries:

- ClinicalTrials.gov,
- Australian New Zealand Clinical Trials Registry,
- WHO International Clinical Trials Registry Platform,
- meta- Register of Controlled Trials (mRCT).