Dissertation Training

at

International Institute of Health Management Research New Delhi

Positive Parenting Interventions and Child Behavioural Outcomes: A Systematic Review and Meta-analysis

By

Dr. Simran Dutta

PG/22/122

Under the guidance of

Dr Rupsa Banerjee

Dr. Pijush Kanti Khan

PGDM (Hospital and Health Management)

2022-2024

International Institute of Health Management Research

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The certificate is awarded to

Dr Simran Dutta

In recognition of having successfully completed

her dissertation

at IIHMR, Delhi

and has successfully completed her project on

Positive Parenting Interventions and Child Behavioural Outcomes: A Systematic Review and Meta-analysis

Date- 12th February 2024 to 12th May 2024

International Institute of Health Management Research New Delhi

She comes across committed, sincere and diligent person who has

a strong drive and zeal for learning.

We wish her all the best for future endeavors.

Training & Development

Zonal Head-Human Resources

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr Simran Dutta**, student of PGDM (Hospital and Health Management) from International Institute of Health Management Research, New Delhi has undergone dissertation training at **International Institute of Health Management Research, New Delhi** from 12th February 2024 to 12th May 2024.

The candidate has successfully carried out the study designated to her during dissertation training and her approach to the study has been sincere, scientific and analytical.

The dissertation is in fulfilment of the course requirements.

I wish her success in all her future endeavors.

Dr. Pijush Kanti Khan
Assistant Professor
IIHMR, New Delhi

Dr. Rupsa Banerjee
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IIHMR, New Delhi

Certificate of Approval

[POSITIVE PARENTING INTERVENTIONS AND CHILD BEHAVIOUR OUTCOMES: A SYSTEMATIC REVIEW AND META-ANALYSIS
Positive Parenting interventions and child Metaanalysis

The following dissertation titled "Behavioural outcomes: A systematic review and" at "IIHMR - Delhi" is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
Dr. Puneet Chahal	
Dr. Sumanta Swain	30/8/17

CERTIFICATE FROM DISSERTATION ADVISORY COMMITTEE

This is to certify that Dr Simran Dutta, a graduate student of the PGDM (Hospital and Health Management) has worked under the guidance and supervision of **Dr. Rupsa Banerjee**, Assistant Professor, IIHMR, New Delhi and **Dr. Pijush Kanti Khan**, Assistant Professor, IIHMR, New Delhi. She is submitting this dissertation titled **"Positive Parenting Interventions and Child Behavioural Outcomes: A Systematic Review and Meta-analysis"** in partial fulfilment of the requirements for the award of the **PGDM (Hospital and Health Management).**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Dr. Pijush Kanti Khan
Assistant Professor
IIHMR, New Delhi

Dr. Rupsa Banerjee
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "**Positive Parenting Interventions and Child Behavioural Outcomes: A Systematic Review and Meta-analysis"** has been submitted by **Dr Simran Dutta,** Enrollment no. **PG/22/122** under the supervision of **Dr Rupsa Banerjee,** Assistant Professor, IIHMR Delhi and **Dr Pijush Kanti Khan,** Assistant Professor, IIHMR, New Delhi for the award of PGDM (Hospital and Healthcare Management) of the Institute carried out during the period from 12th February 2024 to 12th May 2024. It embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution or other similar institution of higher learning.

Dr Simran Dutta

FEEDBACK FORM

Name of the Student: Dr Simran Dutta

Name of the Organisation in which dissertation has been completed: International Institute of Health Management Research, New Delhi

Area of Dissertation: Positive Parenting Interventions and Child Behavioural Outcomes: A Systematic Review and Meta-Analysis

Attendance: 100%

Objectives achieved: Learnt how to conduct systematic literature search across multiple databases, critical appraisal, risk of bias meta analysis & manuscript preparation

Deliverables: Systematic review and meta analysis.

Strengths: Motivated, diligent, proficient, meticulous

Suggestion for improvement: None. Keep up the good work!

Suggestions for Institute (Course curriculum, industry interaction, placement, alumni):

Signature of the Officer-in-charge/ Organisation Mentor (Dissertation)

Date: 20/4/2024.

Place: New Delhi

CERTIFICATE OF PLAGIARISM CHECK

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It is an esteemed pleasure to present this research project by thanking each and every one who helped me in this task. I would like to express my sincere gratitude towards my guide **Dr Pijush Kanti Khan,** Assistant Professor, IIHMR, New Delhi, who helped me immensely throughout the tenure of my internship. He inspired me greatly to work in this project with his valuable guidance, support, interest, encouragement, involvement and advice.

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ABSTRACT

Introduction: Behavioural problems in children are a significant public health concern, impacting their social, physical, and mental well-being and if unaddressed, can lead to long-term detrimental effects. This study investigates the efficacy of positive parenting interventions on the behavioural outcomes of children aged 0-12 years. It focuses on internalizing behaviours (e.g., anxiety, depression) and externalizing behaviours (e.g., aggression, ADHD) to provide a comprehensive understanding of the impact of these interventions.

Methodology: A systematic review and meta-analysis were conducted, encompassing research from 1990 to 2024. Data bases included EBSCOHost, ProQuest, PsycNet, PubMed, Science Direct, and Web of Science. All the articles underwent Title screening, Abstract screening and Full text screening. Data extraction included participants characteristics, study characteristics, intervention types, and outcome measures. The quality of the studies was assessed using the Cochrane risk of bias tool, and statistical analysis was performed using Comprehensive Meta-Analysis (CMA) software.

Results: The selection process involved screening 8954 articles, ultimately narrowing down to 121 for the review and 100 for the meta-analysis. Among the 121 articles reviewed, 68 studies reported significant positive effects, while 38 showed non-significant results. Interventions were predominantly delivered to parents (55.37%), with others targeting both parents and children (13.22%), and caregivers (11.57%). Geographically, the studies were concentrated in North America and Europe, with fewer conducted in Africa and Asia. The meta-analysis was conducted for CBCL and SDQ scales as many studies used these two scales for measuring the behavioural outcomes.The meta-analysis demonstrated that positive parenting interventions significantly improved child behavioural outcomes using the SDQ scale.

Conclusion: The findings indicate that positive parenting interventions are effective in mitigating behavioural problems in children, including both internalizing and externalizing issues. It highlights the importance of early and tailored parenting programs to prevent long-term adverse effects. Despite the promising results, further research is needed to explore the variability in intervention effectiveness across different populations and settings, as well as the long-term sustainability of these interventions.

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ACRONYMS/ ABBREVIATIONS

PRISMA: Preferred Reporting Items for Systematic Review and Meta-Analysis

Mesh: Medical Subject Headings

CBCL: Child Behaviour Checklist

ECBI: Eyeberg Child Behaviour Inventory

SDQ: Strengths and Disability Questionnaire

ASQ: Age and Stages Questionnaire

VIPP: Video feedback Intervention to promote Positive Parenting

PMTO: Parent Management Training Oregon

ADHD: Attention Deficit Hyperactive Disorder

SNAP: Swanson, Nolan and Pelham Teacher and Parent Rating Scale

FCC: Family Centred Care

CBT: Cognitive Behavioural Therapy

RAD: Reactive Attachment Disorder

ABOUT IIHMR DELHI

The International Institute of Health Management Research (IIHMR), New Delhi is allied to the "Society for Indian Institute of Health Management Research" which was established in October 1984 under the Societies Registration Act-1958. IIHMR-Delhi was setup in 2008 in response to the growing needs of sustainable management and administration solutions critical to the optimal function of healthcare sector both in India and in the Asia-Pacific region.

We are a leading institute of higher that promotes and conducts research in health and hospital management; lends technical expertise to policy analysis and formulation; develops effective strategies and facilitates efficient implementation; enhances human and institutional capacity to build a competent and responsive healthcare sector. Our multi-dimensional approach to capacity building is not limited to academic programs but offers management development programs, knowledge and skills-based training courses, seminars/webinars, workshops, and research studies. Our four core activities are:

- Academic courses at master's and doctoral level in health and hospital management to meet the growing need of skilled healthcare professionals.
- Research that has high relevance to health policies and programs at national and global level.
- Continued education through management development programs and executive programs for working professionals to help them upgrade their knowledge and skills in response to the emerging needs of the industry.
- Technical consultation to the national and state-level flagship programs to address the gaps in planning as well as implementation.

International Institute of Health Management Research (IIHMR), New Delhi

Over the years IIHMR-Delhi has emerged as an institute of repute both nationally and globally for producing socially conscious, skilled and vibrant top-class health care management professionals. Our graduates are well-matched for the ever-changing health care sector and evolving social milieu. The institute has progressed as a leader in research, teaching, training, community extension programmes and policy advocacy in the field of health care. IIHMR has carved out a niche for itself through its cutting-edge academic curriculum, infrastructure, accomplished multi-disciplinary faculty and research.

The Institute as an autonomous body of international stature has been developing leaders for several years to shape tomorrow's healthcare by equipping the students in the fields of health, hospital, and health information technology. The Institute's dynamic health care research programmes provide rigorous training in management, health systems, hospital administration, health care financing, economics, and information technology.

Commitment to Inclusive Excellence

As an institute, IIHMR-Delhi is committed to creating an environment of higher learning that can serve as the model for the kind of society it strives to build – one of equity, social justice and mutual support. We have also made a concerted effort to promote the ethos and philosophies amongst today's students and nurture them into growing as effective managers, to think both critically and ethically, to learn to cope with ethical dilemmas and apply systems-thinking approaches to serious and complex societal problems. Our internationally renowned faculty lead multidisciplinary health research in multifarious areas such as public health, health services, health economics, hospital management, social determinants of health, mental Health and other topics of global and national interest.

The IIHMR is invited by various governmental and civil society organizations to provide technical support for capacity building and policy research needs that culminates in developing innovative and equitable health care strategies and provide advocacy support for health policy and planning. The institute also responds to the global health threats, natural disasters, conflict and related humanitarian crisis. In addition to the master's and doctoral level programmes, IIHMR-D also offers several highly specialized and popular Management Development Programmes (MDP) to wide range of health professional in the country and overseas which largely addresses educational needs amongst in-service aspirants.

CHAPTER 1: INTRODUCTION

1.1 Background:

Behavioural problems are common among young children with 20% of parents reporting behaviour concerns and up to 15% of 2- to 5- years olds meeting diagnostic criteria for behavioural disorder.(1)

National prevalence estimates suggest that 15.4% of young children (ages 2 to 8 years) have been diagnosed with a mental, behavioural, or developmental disorder (Centers for Disease Control, 2016). These trajectories and outcomes may differentially affect rural communities given that behavioural problems are more prominent in rural relative to urban and suburban communities.(2) Early onset behavioural problems such as aggression and non-compliance are the best predictors of antisocial and criminal behaviour in adolescence and adulthood.(3)

1.2 Overview of Behavioural Problems in Children:

The 2 broad domains outlined for childhood behavioural problems are internalizing and externalizing problems. Internalizing problems focus on the conflicts arising from within the person and are expressed in terms of depression, anxiety, whereas externalizing problems arise from the interaction and conflicts the child encounters with the social environment and is expressed in terms of aggression, oppositional behaviour, disobedience, disruptive behaviour.

In the Internalizing domain which incorporates depression and anxiety, it has been reported that anxiety disorders affect 7% of children in any year and contribute to half of all mental health problems in youth and rates vary between 1.5-9.4%. It is believed that a major risk factor for anxiety and internalizing issues is temperamental inhibition which is seen in the form of shying or retreating away fearfully. The repressed temperament of

a child might cause parents to become too cautious and controlling, which unintentionally perpetuates and prolongs anxiety by impeding the growth of autonomy.(4)

The externalizing domain comprises of oppositional, aggressive, hyperkinetic behaviour, disruptive behaviour disorders (DBDs) which are associated with significant impairments in children's social, emotional, and educational functioning as well as poor long-term outcomes such as school dropout, poor physical health, and adult psychiatric disorder. Longitudinal research indicates that developmentally excessive Physical Aggression (PA) which is a core feature of DBD's is significantly stable from a young age.(5)

Since these behavioural problems can have a long- term effect on the overall development of the child, hence parenting is identified as a primordial preventive intervention to prevent the emergence of behavioural disorders.

1.3 Overview of Different Theories used in Parenting Programs:

Attachment and Coercion theory, 2 main theoretical frameworks identified that maladaptive parent-child interactions cause the development of externalising problems in early childhood. As per the attachment theory, infants are biologically predisposed to use their parents as a haven of safety to provide comfort and protection when they are distressed and as a secure base from which they can explore the environment (Bowlby, 1969). It focuses on the quality of early parental care, in terms of sensitivity and responsiveness, as an important contributor to salient socialization processes in the first years of life. Whereas the coercion theory which is based on social learning perspective, focuses on ineffective parental discipline and states that child externalizing problems are more likely to emerge when a child is reinforced for responding with negative behaviour to parental requests or demands. The child is trying to coerce the parent into terminating the undesired request, and the parent's repeated attempts to obtain child compliance are met with increasingly difficult behaviour.(6)

Parental assistance and supervision may play a critical role in minimizing psychological morbidity in children impacted by living in challenging environments. In difficult situations, primary caregivers play a vital role in safeguarding their children's mental health.(7)

Effective parenting, characterized by consistent, supportive, and responsive child rearing practices, is critical to achieving positive developmental outcomes for children. (8)Parental expressivity of emotion, parental discussion of emotion, and parental response to children's emotions are the three kinds of parental emotion socialization activities that are assumed to direct the regulation of emotions as well as the comprehension of emotions and regulation.(9)

Not only have the parenting programmes recommended by WHO's guidelines as an essential tool in addressing the behavioural problems of children (10), but they are also regarded as a key strategy for preventing violence against children.(11)

Parenting programs are interventions designed to improve parenting roles through training, support and education.(10) The five central parenting skills which can be put to use are limit setting and discipline, monitoring and supervision, problem solving, positive involvement, and skill encouragement.(12) which are often regarded as the first line treatments for children with externalising behaviour problems.(13)

The parenting intervention differs on the basis of age group for which an intervention is directed, whether the child suffers from ADHD or is at risk of conduct disorder, ODD etc. Various types of parenting programmes are into play which enable parents/primary caregivers/family members to modify their parenting skills and styles in order to reduce the occurrence of behavioural disorders in children. These programmes are based on social learning theory, attachment theory, involving the use of behaviour management techniques to facilitate a smooth transition from childhood to adulthood without incurring an economic and social cost.

There is more than 30 years of research to show that parenting interventions based on social learning and cognitive behavioural theories are effective in reducing child externalizing behaviour which has been the focus of over 100 studies with significant short- and long-term effects found for child social, emotional and behavioural outcomes, and parenting practices.(5)

1.4 Overview of Parenting Programs:

The Swedish versions of Parent training programs such as Comet, Cope, Incredible Years, Connect are differentiated on the basis of their aim and objectives, the theory which they are based on, age range they are addressing, modalities being used by each program and the number of sessions provided in each program.

Comet, Cope and IY are all inspired by social learning theory and aim to strengthen children's social skills and emotional regulation by using praise and incentives to encourage cooperative behaviour, by ignoring children's inappropriate behaviours, and by exerting positive discipline through rules, routines and effective limit setting. Contrary to this, Connect is an attachment-focused program which encourages parents to reflect on the parent– child relational context, and the attachment needs of the child. It teaches parents how to reframe child behaviours, how to change their own emotional responses when the child acts inappropriately, and how to communicate empathy, all of which are achieved through reflexive exercises, role-plays, and discussions.(14)

Mindful parenting programs are based on mindfulness which in turn is based on stress reduction and cognitive therapy. These include being aware and accepting of the "whole" child, rather than focusing on perceived weaknesses or problems, tolerating negative thoughts and emotions regarding the child, perspective-taking and empathizing with the child, and being compassionate towards the child and the self as a parent.(15)

The Triple P-Positive Parenting Program consists of a tiered, integrated, multilevel system of parenting interventions based on social learning, cognitive-behavioural and

self-regulation theory (see Sanders, 2008, 2012). It incorporates five levels of intervention of increasing intensity and narrowing population reach, ranging from media and information strategies (Level 1) to intensive cognitive-behavioural family intervention (Level 5).(16)

Parent management training (PMT) and parent–child interaction therapy (PCIT) have been the most commonly evaluated and promising treatment modalities for externalizing problems in children. PCIT (Eyberg, 1988) focuses on improving child–parent relationships and providing parents with skills to manage disruptive behaviour.(17)

The Incredible Years Program -an evidence-based (EB) parent course for young children (3 to 10 years of age) at risk or exhibiting conduct disorders, was developed to promote effective parental discipline and praise, and reduce spanking, critical statements, and other negative discipline practices.(18)

1.5 Rationale:

Since these childhood behaviours have an impact on the social, physical and mental wellbeing of not only the children but also the entire family involved and with the appropriate intervention of parent training programs these outcomes can be managed at an early stage before it can lead to more severe problems in adulthood. The behavioural outcomes play an important role in the development of a child in the early years. Earlier a review was conducted to assess the impact of pa renting on the cognitive development of the child but there hasn't been any study conducted to understand the effects of positive parenting on the behavioural outcomes in children. Hence, this study is an attempt to understand the need of such parenting interventions for the different needs of children today. This review looks at the effect of positive parenting interventions on childhood behaviour.

CHAPTER 2: METHODOLOGY

We undertook a systematic review and meta-analysis of the effect of positive parenting on behavioural outcomes of children 0-12 years of age. The outcomes included both domains of internalizing and externalizing behaviour comprising an array of behaviours such as anxiety, depression, oppositional(ODD), aggressive, disruptive behaviour, conduct disorders(CD), physical aggression, hyperkinetic behaviours(ADHD).These behaviours were chosen based on the National prevalence estimates which suggest that 15.4% of young children (ages 2 to 8 years) have been diagnosed with a mental, behavioural, or developmental disorder (Centers for Disease Control, 2016).Our definition of positive parenting interventions referred to interventions aiming to improve positive parenting behaviours. Our review includes various parenting interventions and the effect they have on the behavioural outcomes of the children based on different learning theories, varied number of session and durations of each intervention, addressing the needs of different age groups children, using different mode of intervention (online and offline both), whether provided in a home-based setting, in a clinic, in a school environment. Our review includes children with no intervention or treatment as usual (no active controls) as the comparator group.

Employing Boolean operators, we searched EBSCOHost, ProQuest, PsycNet, PubMed, Science Direct, Web of Science databases for articles which assessed the effect of positive parenting on childhood behavioural outcomes (both internalizing and externalizing behaviours). In order to search for citations, we also examined the reference lists of works that qualify. If the complete text of an eligible study was not available, we got in touch with the researchers and professionals involved in the study. Every paper released between 1990 and February 2024 was evaluated. First, we constructed a PubMed search string. We modified the search teams, keywords, and search strings to match the previously indicated electronic databases. Wherever necessary, we used certain filters for

the study design, such as time period, English language, etc. Before submitting the work, we conducted another search to incorporate any updated articles. To determine whether the search technique is sufficient, we conducted a peer review utilizing a checklist like the PRESS Evidence-Based Checklist. MS-Excel was used for sorting and removing duplicates.

2.1 Study Registration:

This Systematic Review adhered to the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines and the protocol was registered at the International Prospective Register of Systematic Reviews (registration ID: CRD42024510001).

2.2 Search Strategy:

Keywords were used to create a search strategy for addressing the research questions. Systematic search was performed by combining every feasible sequence of all the categories of keywords. The Medical Subject Headings (MeSH) terms and truncated keywords were mixed using the relevant Boolean logic operators i.e., AND, OR, and NOT. The authors (SD, SS, DG, RB) pretested the search strategy to ensure appropriateness of the search strategy in retrieving the relevant articles and subsequent modifications. Based on the inclusion criteria, review was done on the following search engines and other sources. Major databases like; PubMed, Science Direct, PsycNET, Web of Science, EBSCOHost, and ProQuest were used to review published studies. The reference lists of already identified studies were also searched to retrieve additional articles. All published articles from January 1990 to February 2024, were included in this review. The search was done using the following search terms using PICO format given in table 1.

2.3 Searches:

An extensive literature search was carried out in PubMed, Web of Science, ProQuest, Cochrane Library, EMBASE, Google Scholar, and preprint servers. Also, we checked the reference lists of eligible studies for citation searching. We contacted the study investigators and experts if the eligible study was not available for full text. We assessed all articles published between 1990 and February 2024. We initially created a search string for PubMed. We adapted the search teams, keywords, and search strings with other electronic databases mentioned above. We used specific filters for study design such as English language, time-period, etc, where appropriate. We repeated the search before submitting the manuscript to include newer articles. We undertook a peer review of the search strategy using a checklist such as the PRESS Evidence-Based Checklist to assess whether the search strategy was adequate.

2.4 Condition or domain being studied:

Positive parenting, responsive parenting, parenting interventions, child behaviour, internalizing and externalizing behaviours.

2.5 Participants/population:

- Parents and their children between the age of 0-12 years.

2.6 Inclusion and exclusion criteria:

We included original research published in peer reviewed journals, thesis, dissertation that assessed the effect of positive parenting on childhood behavioural outcomes. Intervention consisted of positive parenting intervention with articles directed towards the parent-child attachment, emotional responsiveness, positive behavioural guidance. We included those studies targeting children from 0-12 years of age, from all races, ethnicity and all sexes, whose parents received some parenting intervention. Our review included those children whose parents received no intervention or children with treatment

as usual/ waitlisted children, who did not receive any other active intervention. All studies, irrespective of country, economy, demography, etc., were included in the review. Only Randomized controlled trials and quasi-experimental studies were included in our review.

All those studies were excluded if the children were diagnosed with severe intellectual disability/neurological disorder/brain injury or were suffering from severe physical and nutritional disorders. We excluded those studies in which active control was being given to the comparator group and those studies where there was no control group. In addition, we also excluded editorials, commentaries, animal studies, study protocols, studies having interventions other than parenting and assessing outcomes other than childhood behaviours. Those interventions which were being directed towards children were also excluded. Interventions with single sitting (short duration intervention) were not included in our review. Those studies in which the follow-up period was not defined clearly were also excluded from our review. In addition, those studies whose full text articles were unavailable were excluded from our review and publication language was restricted to English language only.

2.7 Intervention(s), exposure(s):

- Positive parenting intervention directed at any of the following: parent-child attachment, emotional responsiveness, positive behavioural guidance.

2.8 Comparator(s)/control:

- Children where parents receive no intervention or children with treatment as usual/ waitlisted children, with no other active intervention.

2.9 Types of study to be included:

- Only Randomized controlled trials and quasi-experimental studies will be included.

2.10 Context:

All studies, irrespective of country, economy, demography, etc., will be included in the review.

2.11 Main outcome(s):

Assessment of child behaviour at less than or equal to 12 years of age, including problem behaviour, emotion and social skills, using parent reported and/or clinician administered scales of assessment.

Table 1: Keywords (PICO format)

Population	Abstract: infan* *OR* Abstract: child* *OR* Abstract: toddler *OR* Abstract: "6-12 years" *OR* Abstract: "0-6 years" *OR* Abstract: preschool *OR* Abstract: pre-school *OR* Abstract: "pre school" *OR* Abstract: "0-12 years" *OR* Abstract: "3-12 years" *OR* Abstract: school-going *OR* Abstract: "school going" *OR* Abstract: kindergarteners *OR* Abstract: school-age *OR* Abstract: "school age" *OR* Abstract: preschoolers *OR* Abstract: pre-schoolers *OR* Abstract: "pre schoolers" *OR* Abstract: preadoloscent* *OR* Abstract: pre-adoloscent* *OR* Abstract: "pre adoloscent*" *OR* Abstract: young *OR* Abstract: "upto 12 years" *OR* Abstract: "upto 3 years" *OR* Abstract: "upto 6 years" *OR* Abstract: pre-teen* *OR* Abstract: preteen* *OR* Abstract: "pre teen*"

Intervention	Abstract: parent* *OR* Abstract: care- giver *OR* Abstract: caregiver *OR* Abstract: "care giver" *OR* Abstract: mother* *OR* Abstract: matern* *OR* Abstract: fat her *OR* Abstract: family *OR* Abstract: "early intervention" *OR* Abstract: "positive behavior* support" *OR* Abstract: "positive behaviour* support" *OR* Abstract: sensitivity *OR* Abstract: attachment *OR* Abst ract: nurtur* *OR* Abstract: group
Outcome	Abstract: behavio* *OR* Abstract: ECD *OR* Abstract: "early childhood development" *OR* Abstract: externali* *OR* Abstract: internali* *OR* Abstract: function* *OR* Abstract: conduct *OR* Abstract: defian* *OR* Abstract: social* *OR* Abstract: aggressi* *OR* Abstract: temper* *OR* Abstract: emotion* *OR* Abstract: attachment *OR* Abstract: relations hip
Study design	Abstract: "random* control*" *OR* Abstract: random* *OR* Abstract: non- random* *OR* Abstract: quasi *OR* Abstract: experiment* *OR* Abstract : trial

2.12 Measure of effect:

Magnitude of difference in behavioural outcome (eg. Mean difference in scores) between intervention (positive parenting intervention) and control (no intervention or treatment as usual) groups.

2.13 Data synthesis, statistical analysis, and investigation heterogeneity:

Using the search strategy and other additional sources, the title/abstract of all the studies were retrieved for all studies. The reviewers (SD, SS) independently screened the search results to identify the studies that potentially met the inclusion criteria outlined above. Data was stored and arranged in Mendeley software for reference management and removing duplicates. A manual search was also conducted to check for any missed duplicates. Only articles published in English language were considered. Discrepancies in selecting articles based on title/abstract screening were resolved by a 3rd and 4th reviewer (RB, DG).

The selected articles then underwent a full-text screening by SD, SS. Any difference in study selection were discussed amongst the reviewers to prepare a final list for the review. Justification was given for excluding the studies (if any) for further analysis. Discrepancies were resolved by a 3rd and 4th reviewer. All the decisions were recorded on a Mendeley software/ Microsoft Excel spreadsheet. The search process was presented in a PRISMA flow chart. Data was extracted by SD, and SS independently. Any differences in data extraction were discussed amongst the reviewers to prepare a final extracted spreadsheet. Discrepancies were resolved by 3rd and 4th reviewers.

A pre-piloted data extraction sheet was prepared in MS Excel, and the following fields were included for data extraction: Study characteristics (author name, year of publication, country), study population, sample size in intervention and control arms, type of parenting intervention, tools used for outcome ascertainment, outcome measures reported, effect of intervention, and any other important details. If the information was insufficient to support data extraction, we wrote to the authors to share the data. The same was noted and reported appropriately. For missing data, sensitivity analysis was performed, and in case of more than 50% missing data, the study was excluded from the meta-analytical analysis to generate more robust study results.

2.14 Risk of bias (quality) assessment:

To assess risk of bias, studies using the CBCL and SDQ scales were assessed to check for methodological quality using the Cochrane risk of bias tool for RCT studies.

Qualitative Synthesis: Studies were summarised on the basis of parenting interventions pertaining to the following aspects such as age-groups of children, gender of children, geographical regions, children with and without pre-existing behavioural problems, and type of parenting intervention.

All the data was be analyzed using Comprehensive Meta - Analysis Tool (CMA) by the reviewers. The authors presented the data from the selected studies in the form of an evidence table followed by a descriptive table. Meta-analysis was performed by applying a fixed or random effects model as appropriate, considering the assessed heterogeneity between the studies. The pooled estimates (effect size) were reported for CBCL and SDQ using studies and the findings were presented using forest plots. Statistical heterogeneity was assessed using a combination of visual inspection of the forest plot along with consideration of Cochran's Q test and the I^2 statistic results in reference to the Cochrane Handbook Criteria. A probability value of $p<0.05$ will be taken to indicate statistically significant heterogeneity. Sensitivity analyses will be conducted to determine the influence of individual studies on the pooled estimates and whether the overall estimates were dominated by one single study. A p-value of 0.05 will be considered significant.

2.15 Data extraction and statistical analysis:

Using the search strategy and other additional sources, the title/abstract of all the studies were retrieved for all studies. The reviewers (SD, SS) independently screened the search results to identify the studies that potentially meet the inclusion criteria outlined above. Data was stored and arranged in MS-Office for reference management and removing duplicates. A manual search was conducted to check for any missed duplicates.

Discrepancies in selecting articles based on title/abstract screening were resolved by the 3rd and 4th reviewer (RB, DG).

The selected articles then underwent full-text screening independently by the reviewers. Any difference in study selection was discussed amongst the reviewers to prepare a final list for the review. Justification reasons included (Different intervention/outcome, Different study design, Different study population, Comparison of interventions, Different language, follow up not mentioned, Full text unavailable, Intervention on children, no control group, short duration intervention, Active control) were given for excluding the studies for further analysis. Discrepancies were resolved by a 3rd and 4th reviewer. All the decisions on a Microsoft Excel spreadsheet. The search process was presented in a PRISMA flow chart. Data was extracted by reviewers independently. Any differences in data extraction were discussed amongst the reviewers to prepare a final extracted spreadsheet. Discrepancies were resolved by 3rd and 5th reviewers.

A pre-piloted data extraction sheet was prepared in MS Excel, and the following fields were included for data extraction: Study characteristics (author name, year of publication, country), study population, sample size in intervention and control arms, type of parenting intervention, tools used for outcome ascertainment, outcome measures reported, effect of intervention, and any other important details. If the information was insufficient to support data extraction, we wrote to the authors to share the data. The same were noted and reported appropriately.

Those studies with 2 or more parenting interventions were counted as separate studies. For missing data, sensitivity analysis was performed, and in case of more than 50% missing data, the study was excluded from the meta-analytical analysis to generate more robust study results. The following studies were excluded from Meta-Analysis- Quasi-Experimental Studies, Pathway/Model Analysis studies on the basis of data not reported in the format that we wanted, Studies in which follow up measure for control was not

given. Studies which assessed the child behaviour outcomes using the CBCL (Child Behaviour Checklist) and SDQ (Strength and Difficulties Questionnaire) were included for the meta-analysis.

CHAPTER 3: RESULTS

3.1 Study Selection:

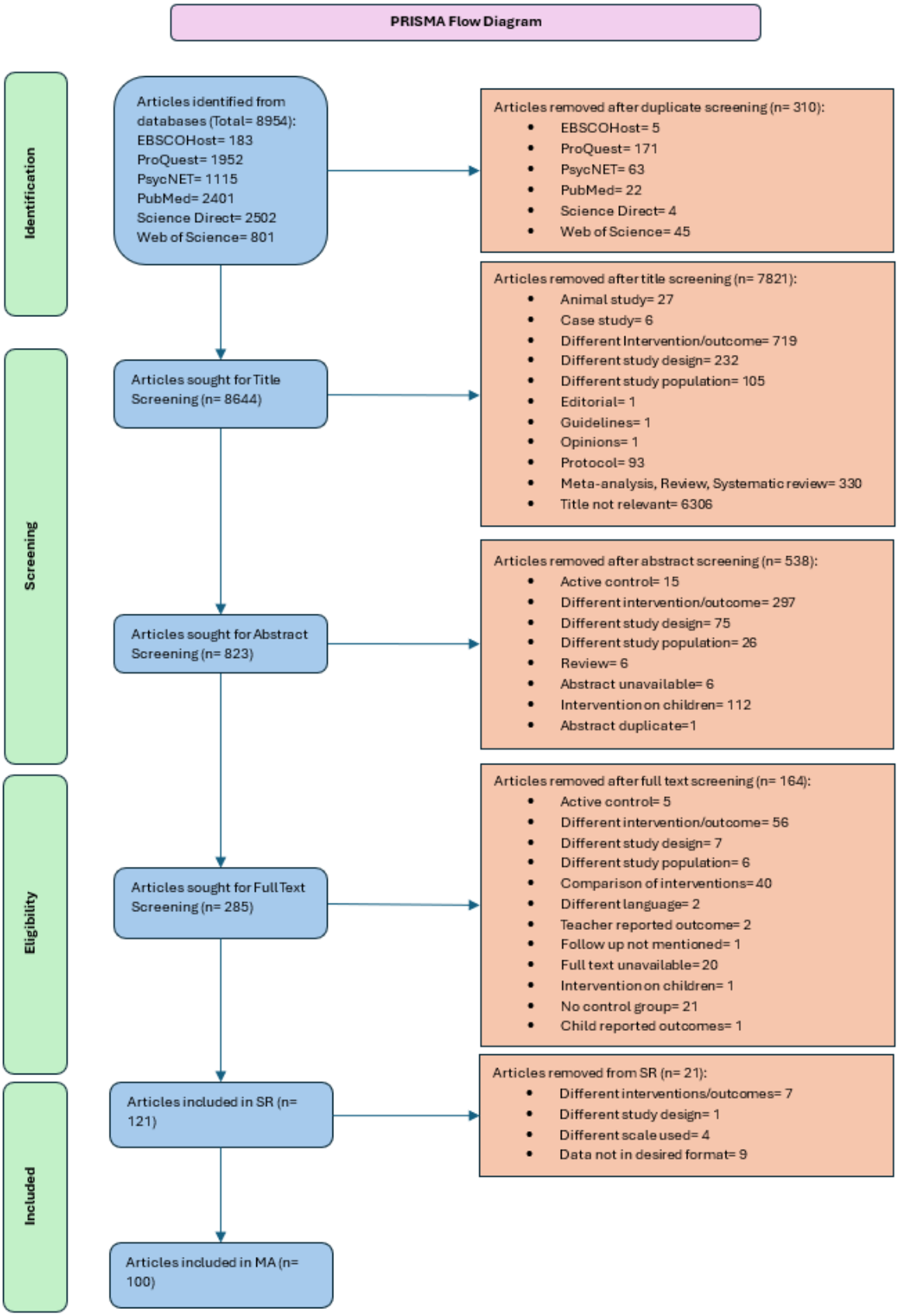
In all 8954 articles were identified from all the 6 databases, out of which 310 were removed as duplicates. The remaining 8644 articles further underwent Title screening. During this stage 7821 articles were removed based on being an Animal study (n=27), many had different intervention/outcomes (n=719), articles had a different study design (n=240), many were excluded due to different study population (n=105), study protocols were excluded(n=93),reviews, systematic review and meta-analysis (n=330) were also excluded, title not relevant (n=6306) were all excluded at the title screening stage.

The remaining 823 articles underwent Abstract Screening. During this stage 537 article were removed. Many articles had different intervention/outcome(n=297), articles with different study designs (n=72) were excluded, many articles had a different study population(n=26), a small number of review articles(n=6) were removed, may articles contained intervention on children (n=112) were removed, active control (n=15) were also removed from this stage.

The remaining 286 articles underwent Full Text Screening, and 164 articles were removed at this stage. Many articles (n=56) had different intervention/outcome, comparison of intervention (n=40) articles were excluded, full text was unavailable (n=20) articles, a few studies (n=21) had no control group, articles with different language (n=2) were also excluded ,follow up was not mentioned in a particular article (n=1) which was removed, short duration intervention (n=2) articles were excluded, a small number of articles (n=7) had a different study design, a few articles (n=6) had a different study population were all removed.

This review includes a summary of all 121 articles. For meta-analysis, 100 articles are included. 14 studies have been studied as they had CBCL and SDQ scale.

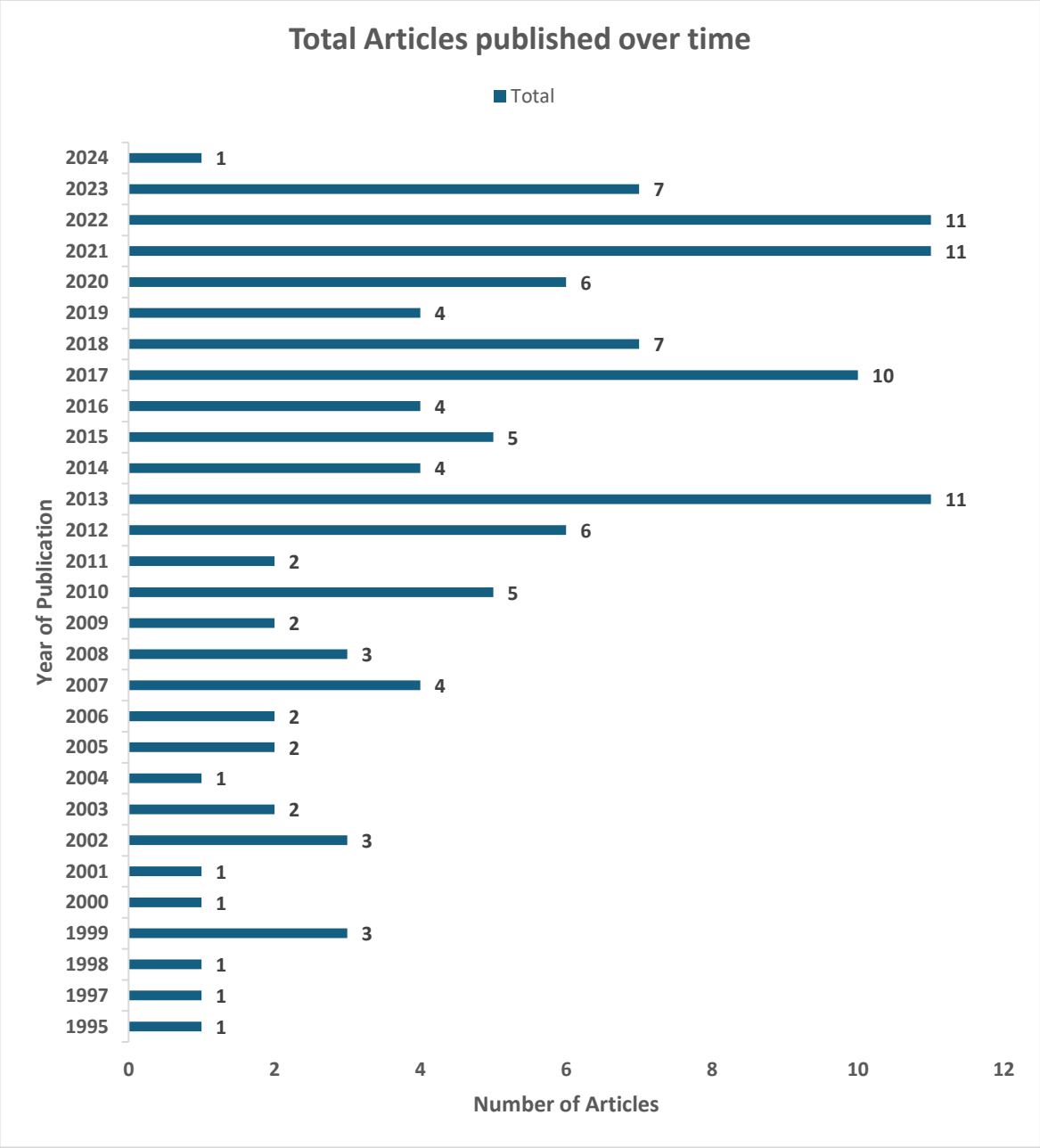
Figure 1: PRISMA Flow Diagram



3.2 Total Articles published over time:

The maximum no. of studies was published between 2010 to 2023. The rise in the number of publications pertaining to parenting and child behavioral outcomes is an indicative of the rising importance of the study. Since child behavior has been closely associated with the type of parenting, it is recommended to carry out further research in the domain. It might serve as an impactful measure to prevent various problems in the child in the upcoming years of life.

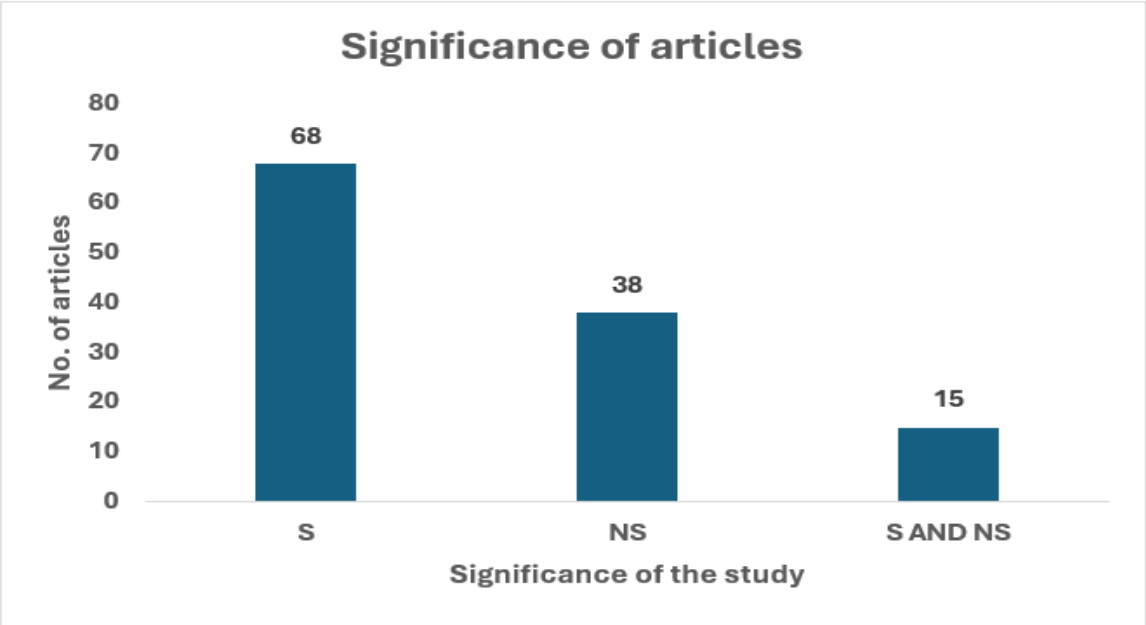
Figure 2: Total articles published over time



3.3 Significant Articles:

Out of the 121 articles, 68 studies reported significant (S) child behavioural outcomes, 38 showed non-significant (NS) results pertaining to child behavioral outcomes. 15 studies had subscales among which some showed significant results for the child behavioral scales, and some were non-significant (S AND NS) for the same.

Figure 3: Distribution of studies based on significance of outcome

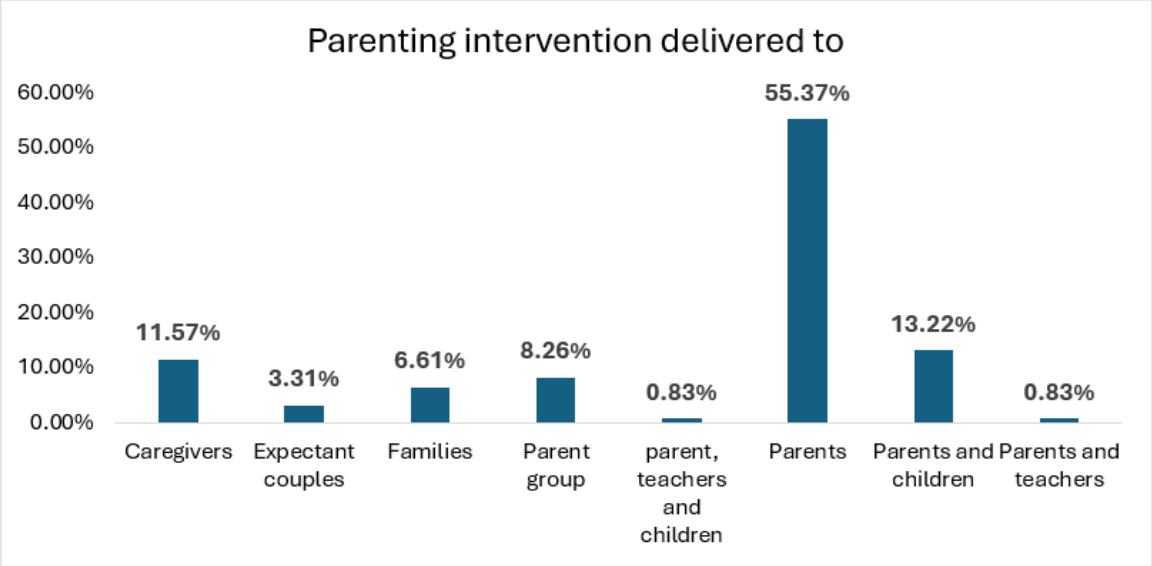


3.4 Parenting Intervention Receivers:

The maximum interventions were delivered to parents (55.37%), followed by both parents and children (13.22%) and caregivers (11.57%). Among the caregivers, interventions given only to the caregiver during the study were 7. In 3 studies, caregiver and children both received the intervention. Only 1 study had caregiver and teachers as the recipient of intervention while in 3 studies both child and caregiver were given the intervention.

In 51 studies, interventions were given to parents/caregivers having child up to 6 years of age. The remaining 70 articles had children in a wider range of age.

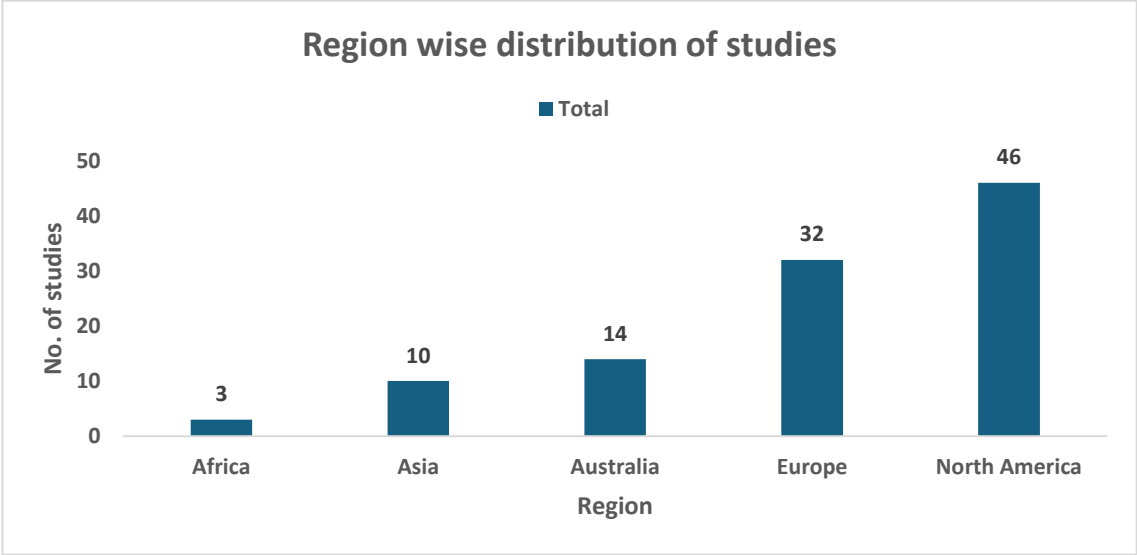
Figure 4: Categories of receivers of intervention



3.5 Region wise distribution of the articles:

The studies were from 5 continents i.e., Africa (3), Asia (10), Australia (14), Europe (32), and North America (46). The remaining papers place of study were not mentioned.

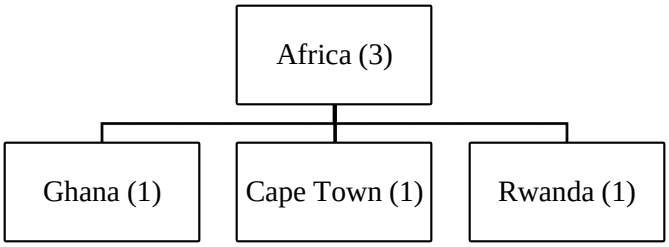
Figure 5: Continent wise distribution of studies



a. Africa:

Only 3 papers were identified from Africa. All these papers showed non-significant results. Participant of children aged 6 months to 9 years took part in these studies in an offline mode.

Figure 6: Distribution of Studies in African continent



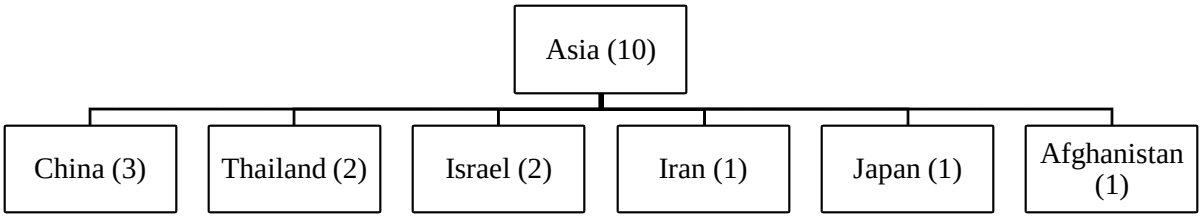
The interventions that were delivered to the participants were Surgira Muriyango (SM)-Strengthen the Family, and Parenting for Lifelong Health. These interventions were delivered by coaches and paraprofessionals community members.

Of all the studies, control group of one study received basic maternal and child education messages. ASQ and ECBI scales were used in these studies to measure the child behavioural outcomes. The follow-up was taken between 8-13 months.

b. Asia:

Total 10 studies were identified from Asian continent. The country wise distribution of the studies is mentioned in the below figure. These studies spanned between 2018 to 2023.

Figure 7: Distribution of Studies in Asian continent



The participants had children between the age of 6 months to 18 years. In 9 studies, participants received intervention in an offline mode and in one study participants received the intervention partially offline and partially online. 2 of these studies were carried out in schools.

The different interventions that were given to the participants were Parent Skill Training, Behavioural Parent Training, Strong Families Program, PCIP (Parent Child Interaction

Program). The participants in 7 studies had a child with some pre-existing condition such as ADHD, disruptive behaviour and aggressive behaviour. In most studies, the intervention was being delivered to the parents and families but there was one study where the expecting mothers in their third trimester were given the intervention.

The interventions were delivered by facilitators, psychologists, paediatric neurologists, local women, social or children workers, specialists, therapists, trainers, and instructors. All the studies in Asia were conducted offline.

The participants in the control group received education on child-care, some received routine clinical care visits. Control participants of one study received the intervention after completion of the data collection.

The follow-up time varied from 1 week to 18 months and the scales used to measure the child behavioural outcomes were SDQ (3 studies), CBCL (3 studies), ECBI (1 study), ASQ, SNAP and other scales were used for the remaining studies.

c. Australia:

The studies from Australia spanned between 2000 to 2022. Among the 14 studies reported from Australia, 10 showed significant results, 3 had non-significant results and the remaining 1 study showed partially significant and partially non-significant results for the subscales used in the study. Maximum studies had their interventions delivered via offline mode (i.e., 11 studies) and the remaining 3 studies were carried out online.

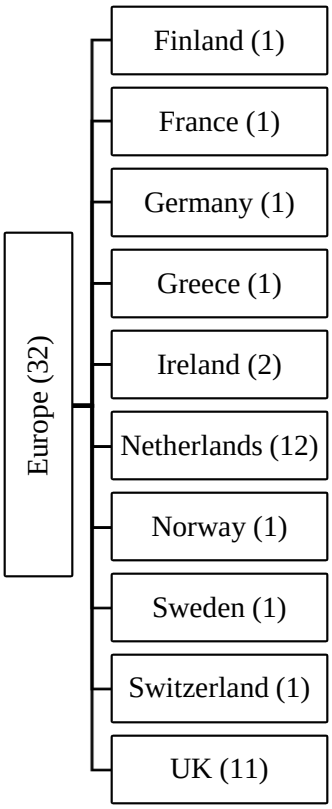
The most common interventions delivered to the participants were Triple P, Behavioural Family Intervention, Tuning in to Kids, and Stepping Stones Triple P (SSTP). In most studies the intervention was being given to the parents or caregivers of the children. Maximum studies used ECBI scale to measure the child behavioural outcomes followed by CBCL scale. The follow up period varied from 2 months to 2 years.

Maximum studies from Australia had a trained professional such as psychologist, nurses, dieticians, etc. to deliver the interventions to the participants. 8 studies had participants of children having some pre-existing conditions such as cerebral palsy, risk od developing conduct problems, developmental disability, asthma, eczema, type I diabetes, and elevated levels of disruptive behaviour.

d. Europe:

Total 32 studies were identified from Europe out of which 13 showed significant results for the interventions, 13 showed non-significant results and the remaining 6 studies showed partially significant and partially non-significant results. The studies spanned between 2003 to 2023. Age-range of children included for these studies was 0-20 years.

Figure 8: Distribution of Studies in European continent



29 studies were conducted in offline mode and 3 studies were carried out in online mode. Most common interventions given for the studies in this region were PMTO (Parent Management Training Oregon), Incredible Years, Comet, Cope, Connect, VIPP-SD (Video Feedback Intervention to Promote Positive Parenting), PCTP (Primary Care Triple

P), CBT (Cognitive Behavioural Therapy), and FCC (Family Centered Care). These interventions were delivered by trained people such as therapists, psychologists, public health nurses & nursery nurses, psychiatrists, researchers, etc. They were delivered to parents/ caregivers. 3 studies had foster families or adoptive families as participants. Participants in the control group received support and advice from a health visitor or general practitioner. Other services included telephone helpline, leaflet information on child health & development, home-based treatment, etc. In one of the studies, the controls were offered the intervention post follow-up.

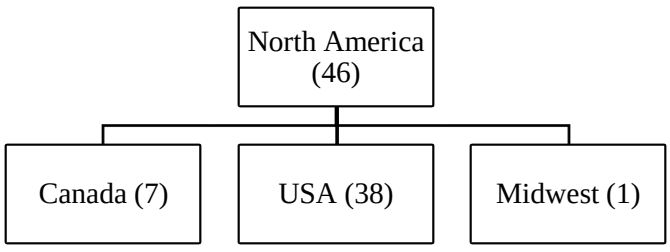
17 studies had participants whose children had some pre-existing conditions like ADHD, tyrannical behaviour, externalizing behaviour, conduct disorder, antisocial behaviour, allergies, mild psychological problems, and RAD (Reactive Attachment Disorder).

2 studies were conducted online, and the remaining 30 studies were conducted offline. Maximum studies used scales like ECBI, CBCL, and SDQ. Other scales being used were SNAP, ASQ, ICQ, and CBQVSF. The follow-up period varied from 2 months to 1.5 years.

e. North America:

Total 46 studies were identified from Europe out of which 30 showed significant results for the interventions, 11 showed non-significant results and the remaining 5 studies showed partially significant and partially non-significant results. The studies spanned between 1995 to 2022. Age-range of children included for these studies was 0-18 years.

Figure 9: Distribution of Studies in North American continent



34 studies were conducted online, 10 studies were conducted offline and the remaining 2 studies used a mixed approach i.e. partially online and partially offline.

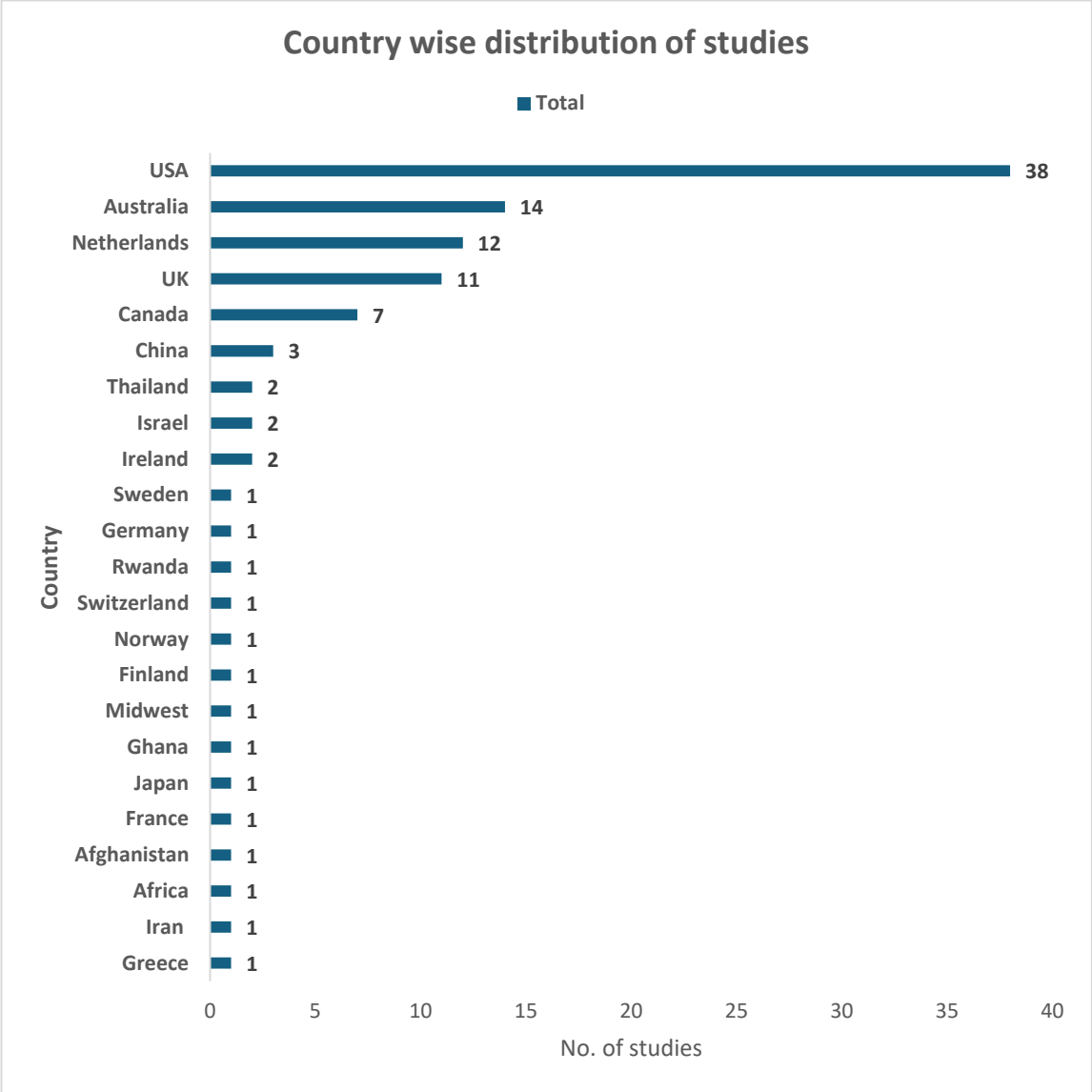
The most common interventions used for these studies were Family Check-up, PCIT (Parent Child Interaction Therapy), PMTO (Parent Management Training Oregon), Incredible Years Program, Social Coaching, Parent Training Program, and Functional Behavioural Skill Training (FBST).

In maximum studies the most used scale was CBCL followed by ECBI and VABS (Vineland Adaptive Behaviour Scale). The remaining studies used scales such as SDQ, Conner's Scale, DBT scale, ERC Checklist NYPRS and CPRSR scale, ITSEA scale, SSIS, CAFAS, PDR, and BASC-2.

3.6 Country wise distribution of the articles:

Out of the 121 studies, most of the studies were from USA (i.e., 38 studies) followed by Australia (i.e., 14 studies), Netherlands (i.e., 12 studies), UK (i.e., 9 studies) and Canada (i.e., 7 studies).

Figure 10: Country wise distribution of studies



a. USA:

A total of 38 papers were identified from the USA. The publication years for these papers varied between 1997 to 2014. 7 out of these papers reported had a non-significant effect of the parenting intervention on the behavioral outcomes. 28 out of 38 studies reported significant results. The remaining 3 studies showed significant results for some subscales and non-significant results for the other sub scales.

The most common interventions used for these studies were Family Check-up, PCIT (Parent Child Interaction Therapy), PMTO (Parent Management Training Oregon), and Incredible Years Program.

31 of these studies were conducted online, 4 were conducted face-to-face and the remaining were carried out through telephone.

In maximum studies the most used scale was CBCL followed by ECBI. The remaining studies used scales such as SDQ, Conner's Scale, DBT scale, ERC Checklist NYPRS and CPRSR scale, ITSEA scale, SSIS, CAFAS, PDR, and BASC-2. The intervention period varied from 7 days to 1 year across all the 38 studies.

b. Netherlands:

The studies spanned between 2006 to 2023 for Netherlands. Among the 12 studies that were conducted in Netherlands, 4 showed significant results, 6 were non-significant and the remaining 2 papers showed partially significant and partially non-significant results for the subscales used in the studies.

The most common interventions delivered in these studies were BPT (Behavioral Parent Training), Triple P program, Incredible Years program, Video Feedback Intervention to promote Positive Parenting (VIPP), and FCC (Family Centered Care).

8 studies were conducted offline, 2 were conducted face-to-face with the intervention receivers, and 1 study was conducted online. Only 1 study used a mixed approach where they distributed manuals to the participants and took a follow-up over a call.

7 studies had participants of children having some pre-existing conditions such as ADHD, externalizing behavior, and psychological problems. Among all the studies from Netherlands, only 1 study had interventions delivered to the foster parents.

The most common scale used to measure the child behavioral outcomes in these studies were ECBI and CBCL. Few studies used other scales such as SDQ scale, SNAP, and Ecological Momentary Assessment (EMA). The follow up period for the interventions ranged between 2 weeks to 1.5 years.

c. UK:

The studies from UK spanned between 2003 to 2022. Total number of studies identified from Canada were 11. Of these, 4 showed significant results, 5 gave non-significant results and the remaining 2 showed partially significant and partially non-significant for the various sub-scales used in the study.

The most common interventions delivered to the participants in the studies from UK were Incredible Years Program, CBT (Cognitive Behavioral Therapy), and Video Feedback Intervention to promote Positive Parenting (VIPP).

9 of these studies were delivered offline and the remaining 2 studies were given via online mode. The setups used for the offline studies were majorly homes or schools.

Five studies had participants of children having some pre-existing conditions such as Reactive Attachment Disorder (RAD), conduct disorder, and antisocial behavior. Of all the study participants, one study had foster parents and one had adoptive parents to whom interventions were imparted to. The most common scales used for measuring the behavioral outcomes of the child in these studies were CBCL, ECBI, and SDQ. The follow-up period for the assessment of interventions ranged from 2 months to 1.5 years in the studies from UK.

d. Canada:

Studies from Canada spanned between 1995 to 2022. There were only 7 studies identified from Canada. Among these studies, 2 showed significant results, 3 showed non-significant results and the remaining 2 studies showed partially significant and partially non-significant results for the various sub-scales that were used.

The most common interventions delivered to the participants in the studies from Canada were Social Coaching, Parent Training Program, and Functional Behavioral Skill Training (FBST). Only 4 studies were conducted offline, and the remaining studies used

online mode. 2 studies were carried out in a home setup and there was one study that was held at a church.

The interventions in the studies from Canada were given mostly to parents followed by caregivers. 5 of these studies had participants of children having pre-existing conditions such as ASD, disruptive disorder, and externalizing behavior. One study had participants of children who were maltreated in the form of sexual abuse.

The most common scales used to measure the behavioral outcomes of children in these studies were CBCL and VABS (Vineland Adaptive Behavior Scale). The follow-up period post intervention ranged between 12 weeks to 22 months.

Effectiveness of Parenting Interventions on child behavioural outcomes:

Among the studies carried out, 51 studies were carried out for parents of children in the 0-6 years of age group. 50.98% of these studies showed significant results in the behavioural outcomes, 37.25% showed non-significant results, and 11.76% showed significant results for some sub scales and non-significant results for others.

Figure 10: Sub- group analysis

S.no.	Category of studies	Sub-categories	N	S	S (%)	NS	NS(%)	Mixed	Mixed (%)
1	Age of children	0-6 years	51	26	50.98%	19	37.25%	6	11.76%
		6-12 years	13	7	53.85%	4	30.77%	2	15.38%
		Across both age groups	45	29	64.44%	11	24.44%	5	11.11%
2	Existing behavioural problems in children	ADHD/CD/ODD/others	58	35	60.34%	16	27.59%	7	12.07%
		No prior behavioural problem	63	33	52.38%	22	34.92%	8	12.70%
3	Intervention delivered to	Parent(s) only	94	52	55.32%	29	30.85%	13	13.83%
		Both parent and child	22	15	68.18%	7	31.82%	0	0.00%
4	Mode of intervention delivery	Face to face	107	60	56.07%	35	32.71%	12	11.21%
		Online	11	7	63.64%	3	27.27%	1	9.09%
		Mixed	5	2	40.00%	1	20.00%	2	40.00%
5	Place of intervention delivery	Home/community setting (incl. online)	42	25	59.52%	10	23.81%	7	16.67%
		Health facility	12	6	50.00%	5	41.67%	1	8.33%
		School	9	3	33.33%	4	44.44%	2	22.22%
6	Inclusion of father in intervention	Yes	104	62	59.62%	31	29.81%	11	10.58%
		No	11	4	36.36%	5	45.45%	2	18.18%
7	Reported behavioural outcome	Internalizing symptoms	4	2	50.00%	1	25.00%	1	25.00%
		Externalizing symptoms	4	2	50.00%	2	50.00%	0	0.00%
		Internalizing and externalizing symptoms	41	19	46.34%	16	39.02%	6	14.63%
		Intensity symptoms	4	4	100.00%	0	0.00%	0	0.00%
		Problem symptoms	7	6	85.71%	0	0.00%	1	14.29%
		Intensity and problem	37	25	67.57%	7	18.92%	5	13.51%

13 studies were carried out among the parents of children of 6-12 years of age, of which only 53.85% studies showed significant results. 45 studies had children from both the age groups and only 64.44% of these studies showed significant results.

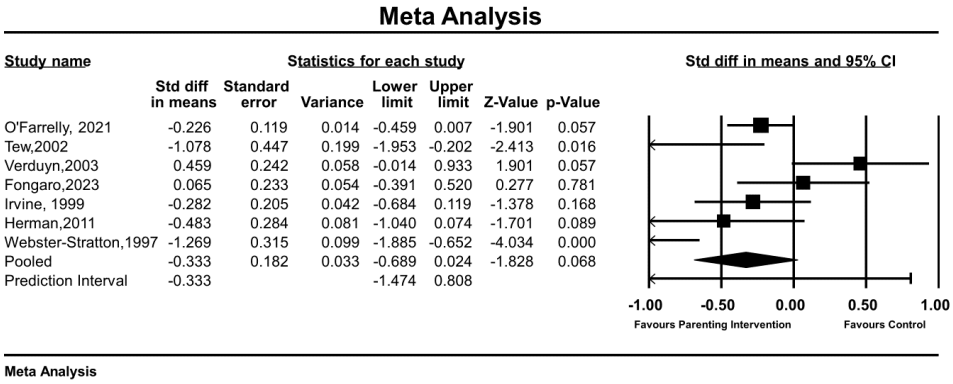
58 papers had children having pre-existing conditions like Attention Deficit Hyperactive Disorder (ADHD), Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), and other conditions. Among these studies, 60.34% studies showed significant results for parenting interventions. For parents having children with no pre-existing conditions, 52.38% studies showed significant results for parenting interventions.

Among all the studies conducted, in 94 studies interventions were delivered to parents/caregivers while in 22 studies, intervention was given to both parent and child. In the studies having both parent and child as intervention group showed more significant results (68.18%) as compared to studies where only parents were being offered the intervention.

Involvement of fathers were seen in 104 studies, among which 59.62% studies yielded significant results.

Meta-analysis:

Figure 12: Pooled effect size of difference in behavioural outcomes using CBCL Scale (random effects model)



The above figure depicts the pooled effect size of behavioural outcomes using the CBCL scale difference in behavioural outcomes (random effect model). The analysis is based on seven studies. The central line depicts mean difference of 0 or no effect and end points represent both ends of the confidence interval.

The left side of the graph <0 refers to the side favouring parenting intervention whereas the right side of the graph >0 refers to the side favouring control. The squares refer to individual study.

The effect size index is the standardized difference in means (d). The mean effect size is -0.333 with a 95% confidence interval of -0.689 to 0.024. The mean effect size in the universe of comparable studies could fall anywhere in this interval.

At the end of the graph the diamond or summary effect size representing the result of all studies pooled together. Since the confidence interval is crossing 0 hence the pooled effect size for CBCL scale is non significant.

The Z-value tests the null hypothesis that the mean effect size is zero. The Z-value is -1.828 with p = 0.068. Using a criterion alpha of 0.050, we cannot reject this null hypothesis. The I-squared statistic is 76%, which tells us that some 76% of the variance in observed effects reflects variance in true effects rather than sampling error.

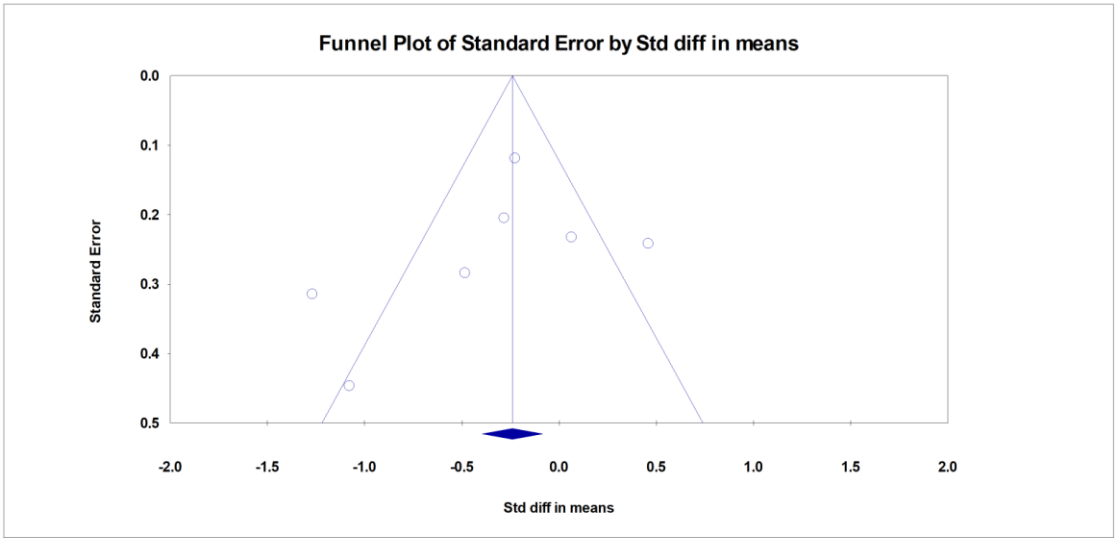
Tau-squared and tau

Tau-squared, the variance of true effect sizes, is 0.164 in d units. Tau, the standard deviation of true effect sizes, is 0.405 in d units.

The prediction interval

If we assume that the true effects are normally distributed (in d units), we can estimate that the prediction interval is -1.474 to 0.808. The true effect size in 95% of all comparable populations falls in this interval.

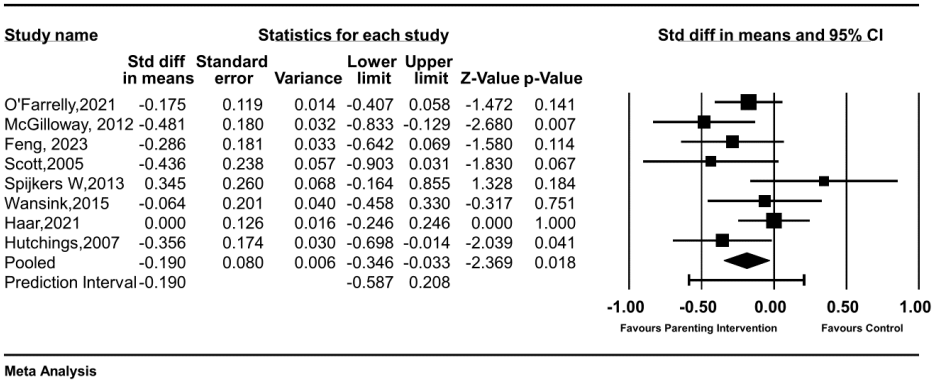
Figure 13: Funnel Plot (random effects) for studies using CBCL Scale



Publication bias using funnel plot for CBCL scale. The funnel plot compares the precision of how close the intervention effect size is to the true effect.

In the above figure, majority of the studies lie around the central mean. One or two studies lie outside the 95% confidence interval depicting low effect size and less study population.

Figure14: Pooled effect size of difference in behavioural outcomes using SDQ Scale (random effects model)



The above figure depicts the pooled effect size of behavioural outcomes using the SDQ scale difference in behavioural outcomes (random effect model). The analysis is based on eight studies. The effect size index is the standardized difference in means (d).

The central line depicts mean difference of 0 or no effect and end points represent both ends of the confidence interval. The left side of the graph <0 refers to the side favouring parenting intervention whereas the right side of the graph >0 refers to the side favouring control. The squares refer to individual study.

The mean effect size is -0.190 with a 95% confidence interval of -0.346 to -0.033. The mean effect size in the universe of comparable studies could fall anywhere in this interval.

At the end of the graph the diamond or summary effect size represents the result of all studies pooled together. Since the confidence interval is not crossing 0 hence the pooled effect size for SDQ scale is significant.

The Z-value tests the null hypothesis that the mean effect size is zero. The Z-value is -2.369 with p = 0.018. Using a criterion alpha of 0.050, we reject the null hypothesis and conclude that in the universe of populations comparable to those in the analysis, the mean effect size is not precisely zero.

The I-squared statistic is 41%, which tells us that some 41% of the variance in observed effects reflects variance in true effects rather than sampling error.

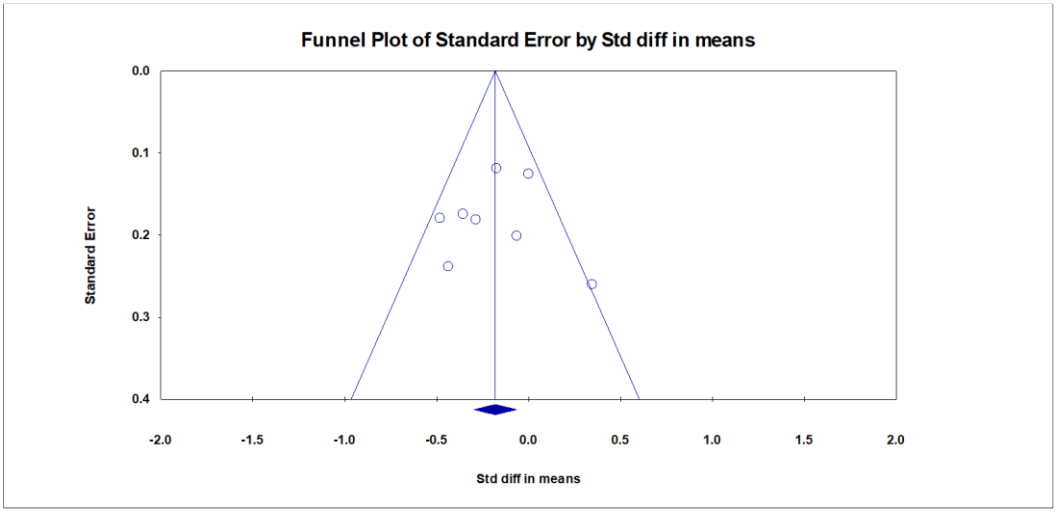
Tau-squared and tau

Tau-squared, the variance of true effect sizes, is 0.020 in d units. Tau, the standard deviation of true effect sizes, is 0.141 in d units

The prediction interval

If we assume that the true effects are normally distributed (in d units), we can estimate that the prediction interval is -0.587 to 0.208. The true effect size in 95% of all comparable populations falls in this interval.

Figure 15: Funnel Plot (random effects) for studies using SDQ Scale



Publication bias using funnel plot for SDQ scale. The funnel plot compares the precision of how close the intervention effect size is to the true effect.

In the above figure, all the studies lie around the central mean in the upper portion of the graph and none of the studies lie outside the confidence interval indicating that for SDQ scale parenting interventions have a significant effect on the behavioural outcomes.

Risk Of Bias

Figure 16: Risk of Bias for Intention to Treat Studies

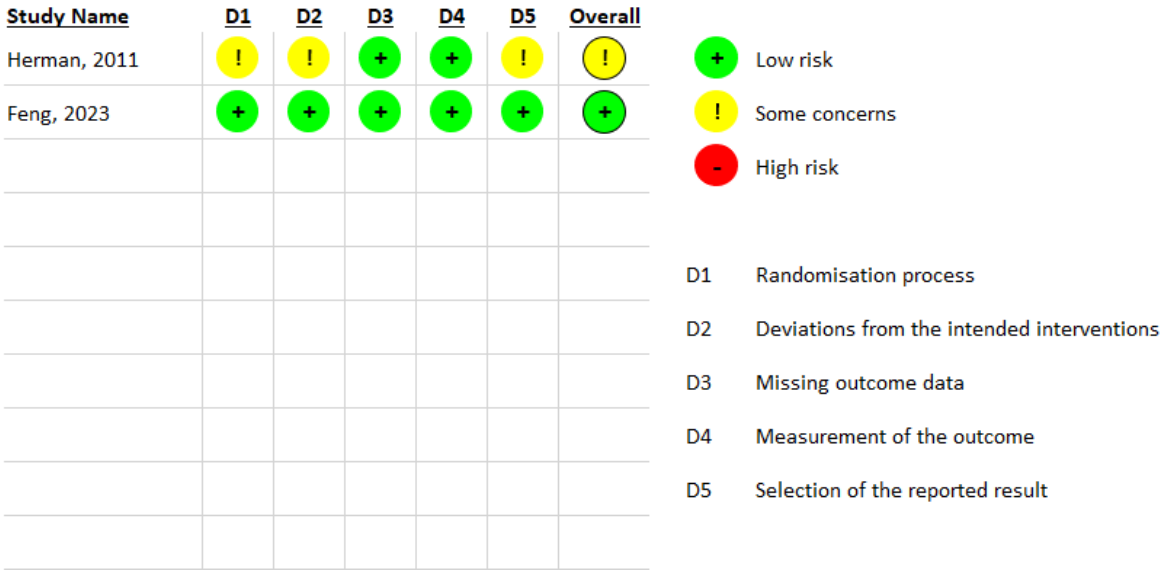


Figure 17: Risk of Bias for Per Protocol Studies

In order to assess the quality of study risk of bias was performed using Cochrane ROB Tool. 12 studies used Intention to Treat analysis wheeras 2 studies used Per Protocol

Analysis. The quality if these 14 studies were assessed using ROB Tool. These studies were assessed across 5 domains and each domain further consisted tof 4-5 questions. Most of the studies reported a low risk of bias.

CHAPTER 4: DISCUSSION

The lives of children are impacted by their parents. The behaviour pattern in later years is influenced by the kind of parenting they received during their early years. According to the studies, depression and anxiety sufferers have a history of poor upbringing in terms of family environment. Children who have authoritative, uninvolved parents are more vulnerable to emotional and behavioural issues. They often find themselves stuck in a vicious cycle and need help from peers and experts.

There is a need to address the situation to manage and prevent any further issues from occurring in the future. When one's life is dependent on emotional, mental, and behavioural stability, ignorance is unacceptable. Attempts have been made to understand the effects of parenting interventions on a child's behaviour. Triple P, Incredible Years (IY), Parent Management Training Oregon (PMTO), etc. have shown significant results for behavioural outcomes in children. These interventions were either given solely to parents/ caregivers or in parent-child dyads or caregiver-child dyads. Fathers' involvement during intervention has shown better outcomes comparatively where only female caregivers or mothers were involved. Relatively, a higher no. of the studies was conducted in face-to-face or offline mode compared to online mode.

Interestingly, most of the studies were carried out in the initial years of childhood and showed high significance in results indicating a need for interventions to be given at early stages of life to prevent any undesirable behavioural outcomes in children. Approximately half of the studies conducted had a child with comorbid conditions such as ADHD, Conduct Disorder, and Oppositional Defiant Disorder. They produced significant results indicating parenting intervention as one of the methods to manage childhood behavioural problems.

Most of the studies were conducted in the North American region followed by Europe, Australia, Asia, and Africa. The maximum studies were conducted in the western region depicting a need to conduct more studies in the developing nations.

The rise in the number of publications about parenting and child behavioral outcomes is indicative of the rising importance of this topic. Since child behavior has been closely associated with the type of parenting, it is recommended to carry out further research in this domain. It might serve as an impactful measure to prevent various problems in the child in the upcoming years of life.

CHAPTER 5: LIMITATION

The effects of positive parenting programs on child behavioural outcomes is a vast topic with various dimensions which have an impact on each other, hence due to the limited time availability Meta-Analysis was conducted only for the CBCL and SDQ scale. Inspite of searching on six databases the subscription to some of the data bases was not available due to which all articles could not be accessed on the topic

CHAPTER 6: CONCLUSION

The review revealed that parenting programs have a positive effect on child behavioural outcomes. From the Systematic review it was observed that maximum number of studies pertaining to positive parenting and child behavioural outcomes was conducted in the western region with North America reporting the maximum number of articles which was 46 followed by 32 articles in Europe and few articles were reported from Asian and African region, thereby making it necessary to carry out more research in the developing nations as well and it requires our attention to be directed towards the impact of parenting on childhood behvaiours. Maximum number of studies were reported in the early years of childhood with significant results depicting that if these interventions are adopted at an earlier stage it can decrease the burden caused due to behavioural problems in children along with having longterm outcomes expressed in the form of decreased anti social behaviour in adulthood, decreased school dropouts, decreased conduct disorders in children. Mothers are believed to play the primary caregiver role when it comes to the early growth and development of children, but the results of these studies show that parenting interventions involving fathers showed a significant result, depicting that there needs to be more research and awareness among fathers regarding their participation and its impact on the development of the child.

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ANNEXURE

Annexure 1: Keywords

Title: Positive Parenting Interventions and Child Behavioural Outcomes: A Systematic Review and Meta-analysis		
S. No.	**Search Query**	**Results**
Database: PsycNET (Data as on 04th March 2024)		
#1	Abstract: infan* *OR* Abstract: child* *OR* Abstract: toddler *OR* Abstract: "6-12 years" *OR* Abstract: "0-6 years" *OR* Abstract: preschool *OR* Abstract: pre-school *OR* Abstract: "pre school" *OR* Abstract: "0-12 years" *OR* Abstract: "3-12 years" *OR* Abstract: school-going *OR* Abstract: "school going" *OR* Abstract: kindergarteners *OR* Abstract: school-age *OR* Abstract: "school age" *OR* Abstract: preschoolers *OR* Abstract: pre-schoolers *OR* Abstract: "pre schoolers" *OR* Abstract: preadoloscent* *OR* Abstract: pre-adoloscent* *OR* Abstract: "pre adoloscent*" *OR* Abstract: young *OR* Abstract: "upto 12 years" *OR* Abstract: "upto 3 years" *OR* Abstract: "upto 6 years" *OR* Abstract: pre-teen* *OR* Abstract: preteen* *OR* Abstract: "pre teen*"	37863
#2	Abstract: parent* *OR* Abstract: care-giver *OR* Abstract: caregiver *OR* Abstract: "care giver" *OR* Abstract: mother* *OR* Abstract: matern* *OR* Ab	55547

	stract: father *OR* Abstract: family *OR* Abstract: "early intervention" *OR* Abstract: "positive behavior* support" *OR* Abstract: "positive behaviour* support" *OR* Abstract: sensitivity *OR* Abstract: attachment *OR* Abstract: nurtur* *OR* Abstract: group	
#3	Abstract: behavio* *OR* Abstract: ECD *OR* Abstract: "early childhood development" *OR* Abstract: externali* *OR* Abstract: interna li* *OR* Abstract: function* *OR* Abstract: conduct *OR* Abstr act: defian* *OR* Abstract: social* *OR* Abstract: aggressi* *O R* Abstract: temper* *OR* Abstract: emotion* *OR* Abstract: a ttachment *OR* Abstract: relationship	115709
#4	Abstract: "random* control*" *OR* Abstract: random* *OR* Abstract: non-random* *OR* Abstract: quasi *OR* Abstract: experiment* *OR* Abstract: trial	51963
#1 AND #2 AND #3 AND #4 (Year: 1990 TO 2024)	((abstract: ("random* control*")) *OR* (abstract: (random*)) *OR* (abstract: (non-random*)) *OR* (abstract: (quasi)) *OR* (abstract: (experiment*)) *OR* (abstract: (trial))) *AND* ((abstract: (behavio*)) *OR* (abstract: (ECD)) *OR* (abstract: ("early childhood development")) *OR* (abstract: (externali*)) *OR* (abstract: (internali*)) *OR* (abstract: (function*)) *OR* (abstract: (conduct)) *OR* (abstract: (defian*)) *OR* (abstract: (social*)) *OR* (abstract: (aggressi*)) *OR* (abstract: (temper*)) *OR* (abstract: (emotion*)) *OR* (abstract:	1096

	(attachment)) *OR* (abstract: (relationship))) *AND* ((abstract: (infan*)) *OR* (abstract: (child*)) *OR* (abstract: (toddler)) *OR* (abstract: ("6-12 years")) *OR* (abstract: ("0-6 years")) *OR* (abstract: (preschool)) *OR* (abstract: (pre-school)) *OR* (abstract: ("pre school")) *OR* (abstract: ("0-12 years")) *OR* (abstract: ("3-12 years")) *OR* (abstract: (school-going)) *OR* (abstract: ("school going")) *OR* (abstract: (kindergarteners)) *OR* (abstract: (school-age)) *OR* (abstract: ("school age")) *OR* (abstract: (preschoolers)) *OR* (abstract: (pre-schoolers)) *OR* (abstract: ("pre schoolers")) *OR* (abstract: (preadoloscent*)) *OR* (abstract: (pre-adoloscent*)) *OR* (abstract: ("pre adoloscent*")) *OR* (abstract: (young)) *OR* (abstract: ("upto 12 years")) *OR* (abstract: ("upto 3 years")) *OR* (abstract: ("upto 6 years")) *OR* (abstract: (pre-teen*)) *OR* (abstract: (preteen*)) *OR* (abstract: ("pre teen*"))) *AND* ((abstract: (parent*)) *OR* (abstract: (care-giver)) *OR* (abstract: (caregiver)) *OR* (abstract: ("care giver")) *OR* (abstract: (mother*)) *OR* (abstract: (matern*)) *OR* (abstract: (father)) *OR* (abstract: (family)) *OR* (abstract: ("early intervention")) *OR* (abstract: ("positive behavior* support")) *OR* (abstract: ("positive behaviour* support")) *OR* (abstract: (sensitivity)) *OR* (abstract: (attachment)) *OR* (abstract: (nurtur*)) *OR* (abstract: (group))) *AND* Year: 1990 *To* 2024	

Database: EBSCOHost (Data as on 04th March 2024)		
#1	AB infan* OR AB child* OR AB toddler OR AB "6-12 years" OR AB preschool OR AB pre-school OR AB "pre school" OR AB "0-12 years" OR AB "3-12 years" OR AB school-going OR AB "school going" OR AB "0-6 years" OR AB kindergarteners OR AB school-age OR AB "school age" OR AB preschoolers OR AB "pre schoolers" OR AB pre-schoolers OR AB preadoloscent* OR AB pre-adoloscent* OR AB "pre adoloscent*" OR AB young OR AB "upto 12 years" OR AB "upto 3 years" OR AB "upto 6 years" OR AB pre-teen* OR AB preteen* OR AB "pre teen*"	82209
#2	AB parent* OR AB care-giver OR AB caregiver OR AB "care giver" OR AB mother* OR AB father OR AB family OR AB matern* OR AB "early intervention" OR AB "positive behavior* support" OR AB "positive behaviour* support" OR AB sensitivity OR AB attachment OR AB nurtur* OR AB group	51843
#3	AB behavio* OR AB ECD OR AB "early childhood development" OR AB externali* OR AB internali* OR AB function* OR AB conduct OR AB defian* OR AB social* OR AB aggressi* OR AB temper* OR AB emotion* OR AB relationship OR AB attachment	124468
#4	AB "random* control*" OR AB random* OR AB non-random* OR AB quasi OR AB experiment* OR AB trial	34606

#1 AND #2 AND #3 AND #4 (Publication Date: 19900101-20240231; Document Type: Article, Dissertation; Language: English)	(AB infan* OR AB child* OR AB toddler OR AB "6-12 years" OR AB preschool OR AB pre-school OR AB "pre school" OR AB "0-12 years" OR AB "3-12 years" OR AB school-going OR AB "school going" OR AB "0-6 years" OR AB kindergarteners OR AB school-age OR AB "school age" OR AB preschoolers OR AB "pre schoolers" OR AB pre-schoolers OR AB preadoloscent* OR AB pre-adoloscent* OR AB "pre adoloscent*" OR AB young OR AB "upto 12 years" OR AB "upto 3 years" OR AB "upto 6 years" OR AB pre-teen* OR AB preteen* OR AB "pre teen*") AND (AB parent* OR AB care-giver OR AB caregiver OR AB "care giver" OR AB mother* OR AB father OR AB family OR AB matern* OR AB "early intervention" OR AB "positive behavior* support" OR AB "positive behaviour* support" OR AB sensitivity OR AB attachment OR AB nurtur* OR AB group) AND (AB behavio* OR AB ECD OR AB "early childhood development" OR AB externali* OR AB internali* OR AB function* OR AB conduct OR AB defian* OR AB social* OR AB aggressi* OR AB temper* OR AB emotion* OR AB relationship OR AB attachment) AND (AB "random* control*" OR AB random* OR AB non-random* OR AB quasi OR AB experiment* OR AB trial)	182
Database: PubMed (Data as on 28th February 2024)		
#1	"infan*"[Title/Abstract] OR "child*"[Title/Abstract] OR "toddler"[Title/Abstract] OR "6-12 years"[Title/Abstract]	2539720

	OR "0-6 years"[Title/Abstract] OR "preschool"[Title/Abstract] OR "pre-school"[Title/Abstract] OR "pre-school"[Title/Abstract] OR "3-12 years"[Title/Abstract] OR "school-going"[Title/Abstract] OR "school-going"[Title/Abstract] OR "kindergarteners"[Title/Abstract] OR "school-age"[Title/Abstract] OR "school-age"[Title/Abstract] OR "preschoolers"[Title/Abstract] OR "pre-schoolers"[Title/Abstract] OR "pre-schoolers"[Title/Abstract] OR "pre adoloscent*"[Title/Abstract] OR "pre adoloscent*"[Title/Abstract] OR "young"[Title/Abstract] OR "upto 12 years"[Title/Abstract] OR "upto 3 years"[Title/Abstract] OR "pre teen*"[Title/Abstract] OR "preteen*"[Title/Abstract] OR "pre teen*"[Title/Abstract]	
#2	"parent*"[Title/Abstract] OR "care-giver"[Title/Abstract] OR "care-giver"[Title/Abstract] OR "caregiver"[Title/Abstract] OR "mother*"[Title/Abstract] OR "father"[Title/Abstract] OR "family"[Title/Abstract] OR "matern*"[Title/Abstract] OR "early intervention"[Title/Abstract] OR "positive behavior* support"[Title/Abstract] OR "positive behaviour* support"[Title/Abstract] OR "sensitivity"[Title/Abstract] OR "attachment"[Title/Abstract] OR "nurtur*"[Title/Abstract] OR "group"[Title/Abstract]	5889517

#3	"behavio*"[Title/Abstract] OR "ECD"[Title/Abstract] OR "early childhood development"[Title/Abstract] OR "externali*"[Title/Abstract] OR "function*"[Title/Abstract] OR "internali*"[Title/Abstract] OR "conduct"[Title/Abstract] OR "defian*"[Title/Abstract] OR "social*"[Title/Abstract] OR "aggressi*"[Title/Abstract] OR "temper*"[Title/Abstract] OR "emotion*"[Title/Abstract] OR "relationship"[Title/Abstract] OR "attachment"[Title/Abstract]	8490797
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#5	"random* control*"[Title/Abstract] OR "random*"[Title/Abstract] OR "non random*"[Title/Abstract] OR "quasi"[Title/Abstract] OR "experiment*"[Title/Abstract] OR "trial"[Title/Abstract]	4343306

#1 AND #2 AND #3 AND #4 (Classical Article, Comparative Study, Corrected and Republished Article, Introductory Journal Article, English, from 1990 – 2024)	(("parent*"[Title/Abstract] OR "care-giver"[Title/Abstract] OR "care-giver"[Title/Abstract] OR "caregiver"[Title/Abstract] OR "mother*"[Title/Abstract] OR "father"[Title/Abstract] OR "family"[Title/Abstract] OR "matern*"[Title/Abstract] OR "early intervention"[Title/Abstract] OR "positive behavior* support"[Title/Abstract] OR "positive behaviour* support"[Title/Abstract] OR "sensitivity"[Title/Abstract] OR "attachment"[Title/Abstract] OR "nurtur*"[Title/Abstract] OR "group"[Title/Abstract]) AND ("infan*"[Title/Abstract] OR "child*"[Title/Abstract] OR "toddler"[Title/Abstract] OR "6-12 years"[Title/Abstract] OR "0-6 years"[Title/Abstract] OR "preschool"[Title/Abstract] OR "pre-school"[Title/Abstract] OR "pre-school"[Title/Abstract] OR "3-12 years"[Title/Abstract] OR "school-going"[Title/Abstract] OR "school-going"[Title/Abstract] OR "kindergarteners"[Title/Abstract] OR "school-age"[Title/Abstract] OR "school-age"[Title/Abstract] OR "preschoolers"[Title/Abstract] OR "pre-schoolers"[Title/Abstract] OR "pre-schoolers"[Title/Abstract] OR "pre adoloscent*"[Title/Abstract] OR "pre adoloscent*"[Title/Abstract] OR "young"[Title/Abstract] OR "upto 12 years"[Title/Abstract] OR "upto 3 years"[Title/Abstract] OR "pre teen*"[Title/Abstract] OR	2401

	"preteen*"[Title/Abstract] OR "pre teen*"[Title/Abstract]) AND ("random* control*"[Title/Abstract] OR "random*"[Title/Abstract] OR "non random*"[Title/Abstract] OR "quasi"[Title/Abstract] OR "experiment*"[Title/Abstract] OR "trial"[Title/Abstract]) AND ("child*"[Title/Abstract] AND ("behavio*"[Title/Abstract] OR "ECD"[Title/Abstract] OR "early childhood development"[Title/Abstract] OR "externali*"[Title/Abstract] OR "function*"[Title/Abstract] OR "internali*"[Title/Abstract] OR "conduct"[Title/Abstract] OR "defian*"[Title/Abstract] OR "social*"[Title/Abstract] OR "aggressi*"[Title/Abstract] OR "temper*"[Title/Abstract] OR "emotion*"[Title/Abstract] OR "relationship"[Title/Abstract] OR "attachment"[Title/Abstract]))) AND ((classicalarticle[Filter] OR comparativestudy[Filter] OR correctedandrepublishedarticle[Filter] OR introductoryjournalarticle[Filter]) AND (english[Filter]) AND (1990:2024[pdat]))	
Database: Web of Science (Data as on 29th February 2024)		
#1	((((((((((((((((((((((((((TI=(infan*)) OR TI=(child*)) OR TI=(toddler)) OR TI=("6-12 years")) OR TI=("0-6 years")) OR TI=(preschool)) OR TI=(pre-school)) OR TI=("pre school")) OR TI=("0-12 years")) OR TI=("3-12 years")) OR TI=(school-going)) OR TI=("school going")) OR	1156882

	TI=(kindergarteners)) OR TI=(school-age)) OR TI=("school age")) OR TI=(preschoolers)) OR TI=("pre schoolers")) OR TI=(pre-schoolers)) OR TI=(preadoloscent*)) OR TI=("pre adoloscent*")) OR TI=(pre-adoloscent*)) OR TI=(young)) OR TI=("upto 12 years")) OR TI=("upto 3 years")) OR TI=("upto 6 years")) OR TI=(pre-teen*)) OR TI=(preteen*)) OR TI=("pre teen*") Timespan: 1990-01-01 to 2024-02-29	
#2	((((((((((((TI=(parent*)) OR TI=(care-giver)) OR TI=("care giver")) OR TI=(caregiver)) OR TI=(mother*)) OR TI=(father)) OR TI=(family)) OR TI=(matern*)) OR TI=("early intervention")) OR TI=("positive behavior* support")) OR TI=("positive behaviour* support")) OR TI=(sensitivity)) OR TI=(attachment)) OR TI=(nurtur*)) OR TI=(group) Timespan: 1990-01-01 to 2024-02-29	1140240
#3	((((((((((((TI=(behavio*)) OR TI=(ECD)) OR TI=("early childhood development")) OR TI=(externali*)) OR TI=(function*)) OR TI=(internali*)) OR TI=(conduct)) OR TI=(defian*)) OR TI=(social*)) OR TI=(aggressi*)) OR TI=(temper*)) OR TI=(emotion*)) OR TI=(relationship)) OR TI=(attachment) Timespan: 1990-01-01 to 2024-02-29	3535578
#4	(((((TI=("random* control*")) OR TI=(random*)) OR TI=(non-random*)) OR TI=(quasi)) OR TI=(experiment*)) OR TI=(trial) Timespan: 1990-01-01 to 2024-02-29	1311552

#1 AND #2 AND #3 AND #4 (Timespan: 1990-01-01 to 2024-02-29)	((((((((((((((((((((((((TI=(infan*)) OR TI=(child*)) OR TI=(toddler)) OR TI=("6-12 years")) OR TI=("0-6 years")) OR TI=(preschool)) OR TI=(pre-school)) OR TI=("pre school")) OR TI=("0-12 years")) OR TI=("3-12 years")) OR TI=(school-going)) OR TI=("school going")) OR TI=(kindergarteners)) OR TI=(school-age)) OR TI=("school age")) OR TI=(preschoolers)) OR TI=("pre schoolers")) OR TI=(pre-schoolers)) OR TI=(preadoloscent*)) OR TI=("pre adoloscent*")) OR TI=(pre-adoloscent*)) OR TI=(young)) OR TI=("upto 12 years")) OR TI=("upto 3 years")) OR TI=("upto 6 years")) OR TI=(pre-teen*)) OR TI=(preteen*)) OR TI=("pre teen*")) AND ((((((((((((TI=(parent*)) OR TI=(care-giver)) OR TI=("care giver")) OR TI=(caregiver)) OR TI=(mother*)) OR TI=(father)) OR TI=(family)) OR TI=(matern*)) OR TI=("early intervention")) OR TI=("positive behavior* support")) OR TI=("positive behaviour* support")) OR TI=(sensitivity)) OR TI=(attachment)) OR TI=(nurtur*)) OR TI=(group)) AND ((((((((((((TI=(behavio*)) OR TI=(ECD)) OR TI=("early childhood development")) OR TI=(externali*)) OR TI=(function*)) OR TI=(internali*)) OR TI=(conduct)) OR TI=(defian*)) OR TI=(social*)) OR TI=(aggressi*)) OR TI=(temper*)) OR TI=(emotion*)) OR TI=(relationship)) OR TI=(attachment) AND (((((TI=("random* control*"))	799

	OR TI=(random*)) OR TI=(non-random*)) OR TI=(quasi)) OR TI=(experiment*)) OR TI=(trial))	
Database: ProQuest (Data as on 29th February 2024)		
#1	(((noft(pre-adoloscent*) OR noft(young) OR noft("upto 12 years") OR noft("upto 3 years") OR noft("upto 6 years") OR noft(pre-teen*) OR noft(preteen*) OR noft("pre teen*" OR noft(school-going) OR noft("school going") OR noft(kindergarteners) OR noft(school-age) OR noft("school age") OR noft(preschoolers) OR noft("pre schoolers") OR noft(pre-schoolers) OR noft(preadoloscent*) OR noft("pre adoloscent*" OR noft(infan*) OR noft(child*) OR noft(toddler) OR noft("6-12 years") OR noft("0-6 years") OR noft(preschool) OR noft("pre school") OR noft("0-12 years") OR noft("3-12 years") OR noft(pre-school)) AND stype.exact("Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)	86595
#2	(((noft("positive behaviour* support") OR noft(sensitivity) OR noft(attachment) OR noft(nurtur*) OR noft(group) OR noft(parent*) OR noft(care-giver) OR noft("care giver") OR noft(caregiver) OR noft(mother*) OR noft(father) OR noft(family) OR noft(matern*) OR noft("early intervention") OR noft("positive behavior* support")) AND stype.exact("Working Papers" OR "Scholarly	441281

	Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)	
#3	(((noft(behavio*) OR noft(ECD) OR noft("early childhood development") OR noft(externali*) OR noft(function*) OR noft(internali*) OR noft(conduct) OR noft(defian*) OR noft(social*) OR noft(aggressi* OR noft(temper*) OR noft(emotion*) OR noft(relationship) OR noft(attachment)) AND stype.exact("Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)	1125024
#4	(((noft("random* control*") OR noft(random*) OR noft(non-random*) OR noft(quasi) OR noft(experiment*) OR noft(trial)) AND stype.exact("Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)	703194
#1 AND #2 AND #3 AND #4	(((noft(pre-adoloscent*) OR noft(young) OR noft("upto 12 years") OR noft("upto 3 years") OR noft("upto 6 years") OR noft(pre-teen*) OR noft(preteen*) OR noft("pre teen*" OR noft(school-going) OR noft("school going") OR noft(kindergarteners) OR noft(school-age) OR noft("school	1951

	age") OR noft(preschoolers) OR noft("pre schoolers") OR noft(pre-schoolers) OR noft(preadoloscent*) OR noft("pre adoloscent*" OR noft(infan*) OR noft(child*) OR noft(toddler) OR noft("6-12 years") OR noft("0-6 years") OR noft(preschool) OR noft("pre school") OR noft("0-12 years") OR noft("3-12 years") OR noft(pre-school)) AND stype.exact("Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)) AND (((noft("positive behaviour* support") OR noft(sensitivity) OR noft(attachment) OR noft(nurtur*) OR noft(group) OR noft(parent*) OR noft(care-giver) OR noft("care giver") OR noft(caregiver) OR noft(mother*) OR noft(father) OR noft(family) OR noft(matern*) OR noft("early intervention") OR noft("positive behavior* support")) AND stype.exact("Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)) AND (((noft(behavio*) OR noft(ECD) OR noft("early childhood development") OR noft(externali*) OR noft(function*) OR noft(internali*) OR noft(conduct) OR noft(defian*) OR noft(social*) OR noft(aggressi* OR noft(temper*) OR noft(emotion*) OR noft(relationship) OR noft(attachment)) AND stype.exact("Working Papers"	

	OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229)) AND (((noft("random* control*") OR noft(random*) OR noft(non-random*) OR noft(quasi) OR noft(experiment*) OR noft(trial)) AND stype.exact("Working Papers" OR "Scholarly Journals" OR "Dissertations & Theses")) AND at.exact("Dissertation/Thesis" OR "Working Paper/Pre-Print")) AND la.exact("English") AND pd(19900101-20240229))	

Annexure 2: Significance of Scales across studies from different regions of the world

(S= Significant, NS= Non-Significant, S AND NS= Partially Significant and Partially Non-Significant)

Africa				
S.no.	**Scale**	**S**	**NS**	**S AND NS**
1	ASQ		2	
2	ECBI		1	
3	MDAT		1	

Asia				
S. no.	**Scale**	**S**	**NS**	**S AND NS**
1	ASQ	1		
2	CBCL	1	2	
3	ECBI	1		
4	SDQ	2	1	
5	Self-reported Aggression Scale	1		
6	SNAP		1	
7	VADPRS		1	

Australia				
S. no.	**Scale**	**S**	**NS**	**S AND NS**
1	CAPES	1		
2	CBCL		1	1
3	DBC	1		
4	ECBI	9	2	
5	Revised Preschool Anxiety Scale (PAS-R)	1		
6	SDQ	2		

Europe				
S. no.	**Scale**	**S**	**NS**	**S AND NS**
1	CBCL	1	10	
2	SDQ	3	8	
3	ECBI	13	2	1
4	ASQ		1	1
5	PACS	1		
6	ICQ		1	
7	SNAP	1		
8	CBQVSF	1		
9	Daily Rated Problem	1		

North America				
S. no.	**Scale**	**S**	**NS**	**S AND NS**
1	CBCL	16	5	2
2	SDQ	1		
3	ECBI	9		
4	AOSI		1	
5	PDR	2		
6	VABS	1	1	
7	ITSEA	1	1	
8	DPIC-R	1		
9	BASC-2	2	2	
10	Conners's		1	
11	Filial Problem		1	
12	DBD		1	
13	BPI	1		
14	ERC (Emotion Regulation Checklist)	1		
15	CAFAS	1		
16	SSIS	1		
17	NYPRS	1		
18	PECFAS	1		
19	ADHD Rating Scale			1

Annexure 3: Significance of Parenting Interventions across studies from different regions of the world

(S= Significant, NS= Non-Significant, S AND NS= Partially Significant and Partially Non-Significant)

Africa				
S.no.	**Intervention**	**S**	**NS**	**S AND NS**
1	Integrated Mothers and Babies Course and Early Childhood Development (iMBC/ECD) program		1	
2	Parenting for Lifelong Health		1	
3	Sugira Muryango (SM) - Strengthen the Family		1	

Asia				
S. no.	**Intervention**	**S**	**NS**	**S AND NS**
1	System-based parent group therapy	1		
2	Behavioural Parent Training (BPT)		1	
3	Parenting Skills Training Program (PSTP)	1		
4	Parenting training group		1	
5	PCIT (Parent-Child Interaction Program)		1	
6	PPOP (positive Parenting for Oppositional Preschoolers)	1		
7	Strong Families Program	1		
8	The Care Group Manual	1		
9	Schema-enhanced parent behaviour therapy (SPBT)	1		

Australia				
S. no.	**Intervention**	**S**	**NS**	**S AND NS**
1	Acceptance and Commitment Therapy (ACT)			
2	Cool Little Kids parenting group program	1		
3	DVD	1		
4	EBFI	1		
5	Mindful parenting programs (MPPs)			1
6	SSTP	2		
7	Triple P	4	1	
8	Tuning in to Kids	2		
9	Universal Intervention		1	

Europe				
S. no.	**Intervention**	**S**	**NS**	**S AND NS**
1	Video feedback Intervention to promote Positive Parenting and Sensitive Discipline (VIPP-SD)		3	
2	Comet	1		
3	Cope	1		
4	Incredible Years	5	1	1
5	Connect	1		
6	Enhancing Social-Emotional Health and Wellbeing in the Early Years (E-SEE) Steps		1	
7	PMTO (Parent Management Training Oregon)	2	1	
8	Triple P	2		
9	The PEP intervention- prevention programme for externalizing problem behaviour		1	
10	Primary Care Triple P (PCTP) program	1		
11	PBCM Program - Preventive Basic Care Management		1	
12	Self-help parenting program			1
13	The cognitive behavioural approach.			
14	Empowering parents, empowering communities			1
15	Incredible Years Preschool BASIC Parenting Program,			1
16	Behavioural parent training Groningen at home [BPTG@HOME]			1
17	CBT (Cognitive Behavioural Therapy)		1	
18	NVR (Non-violent resistance)		1	

S. no.	Intervention	S	NS	S AND NS
19	Webster- Stratton Incredible Years basic parenting programme	2		
20	SPOKES program	1		
21	FCC (Family Centered Care)		1	
22	Self help aprenting program		1	
23	PIPPA program			1
24	antecedent-based condition (AC)	1		

North America				
S. no.	**Intervention**	**S**	**NS**	**S AND NS**
1	Attachment-based intervention		1	
2	Adoloscent Transition Program	1		
3	BEAM program (Building Emotional Awareness and Mental Health)		1	
4	BSF-building Strong Families	1		
5	CBC: Conjoint Behavior Consultation	1	1	
6	Chicago Parent Program		1	
7	Child Adult Relationship Enhancement in Primary Care (PriCARE)	1		
8	Face to Face		1	
9	Family Check-Up (FCU)	2	1	1
10	Family Foundations program			1
11	Family Nurture Intervention (FNI)	1		
12	Family Spirit- a paraprofessional delivered, home-visiting pregnancy and early childhood intervention	1		
13	family-based group intervention	1		
14	Filial Therapy	1	1	1
15	Friendship Interventions		1	
16	Functional Behavioral Skill Training (FBST)	1		
17	Keeping Foster Parents Trained and Supported- KEEP	1		
18	multiccomponent family intervention	1		
19	New Forest Parenting Programme (NFPP)	1		
20	PACT (PArent and Child Together)	1		

S. no.	Intervention	S	NS	S AND NS
21	Parent training programs	2		
22	PARTNERS parent training group	1		
23	PC-CARE	1		
24	PCIT (Parent Child Interaction Therapy)	2		
25	PFR (Promoting First Relationships Preventive Intervention	1		
26	PMTO Parent Management Training Oregon	2		
27	Prevention program for preschool children with Externalizing Problem behavior (PEP)		1	
28	Project Support Condition	1		
29	RET (reminiscing and emotion training)	1		
30	Safe Children Preventive Intervention	1		
31	Social ABCs coaching		1	
32	Strongest Families behavioural intervention			1
33	The IY Program	3	1	
34	The Video Interaction Project			1

Annexure 4: Data sheet

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/Non-Significant
O'Farrelly, 2021	UK	12-36 months	Video feedback Intervention to promote Positive Parenting and Sensitive Discipline (VIPP-SD)	Families	CBCL=T SDQ=T	NS
Burgdorf, 2022	Australia	3-18 years	Mindful parenting programs (MPPs)	Parents	CBCL-School and Preschool Internalizing	S AND NS
Stattin, 2015	Sweden	3-12 years	Comet, Cope, IY, Connect	Parents and children	ECBI-I,P	S
McGillowway, 2012	Ireland	32-88 months	Incredible Years BASIC parenting program (IYBP)	Parents	ECBI-I,P	S
Linares, 2006	USA	3-10 years	IY Program	Prenting to groups of 4 to 7 parent pairs Co parenting-individual families (biological and foster parent pair and target child)	CBCL-Ext, T score ECBI-Total T score	NS
Baker, 2017	Australia	2-9 years	Triple P Online Brief (TPOL Brief)	Parents	ECBI CAPES	S
Sanders, 2012	Australia	2-9 years	Triple p online	Parents	ECBI SDQ	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant /Non-Significant
Tully, 2017	Not specified	24-47 months	Triple P Discussion Group- Brief parenting intervention (Group Triple P)	Families	CBCL PA-SEC	S AND NS
Herbert, 2013	Not specified	34-76 months	Parenting Your Hyperactive Preschooler program	Parents and children	DBRS - I,H BASC2-PRS-E,I ERC-L,ER	S
Bywater, 2022	UK	0-8 weeks	Enhancing Social-Emotional Health and Wellbeing in the Early Years (E-SEE) Steps"—comprising a universal step (Incredible Babies Book; IY-B) plus targeted IY		ASQ SDQ- at final point only	NS
Breitenstein, 2021	Not specified	2-5 years	Parent program	Parents	ECBI-I,P SDQ-E,C,H,PR,P	NS
Kjobli, 2013	Norway	3-12 years	PMTO-f Parent Management Training, the Oregon mode	Families	ECBI CBCL	S
Scott, 2012	UK	4-6 years	'Incredible Years' school age program	Parents	PACS	S
Brotman, 2009	USA	33-63 months	Incredible Years Series (IYS)	Parents and preschoolers	DPICS-R	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant /Non-Significant
Van Zeijl, 2006	Netherlands	1-3 years	Video feedback Intervention to promote Positive Parenting and Sensitive Discipline (VIPP-SD)	Families	CBCL ICQ	NS
Feng, 2023	China	4-6 years	System-based parent group therapy	Parents	SDQ	S
Yao, 2022	Japan	6-12 years	Behavioural Parent Training(BPT)In person, In group format	Parents	CBCL SNAP	NS
Foskolos, 2023	Greece	2-12 years	Triple P Seminar Series	Parents	ECBI-I,P	S
MacKinnon, 2022	Canada	18-36 months	BEAM program Building Emotional Awareness and Mental Health	adult (aged 18 years or older) mother or other primary caregiver who identify as a woman (e.g., grandmother, aunt)	CBCL	NS
Bjorknes, 2013	USA	3-9 years	PMTO Parent Management Training Oregon group-based program	Mothers	ECBI-P	S

Schilling, 2017	Not specified	2-6 years	PriCARE	Child-caregiver dyads	ECBI	NS
Schilling, 2020	Not specified	2-6 years	Child-Adult Relationship Enhancement in Primary Care PriCARE	Parents	ECBI	NS
Oliveira, 2022	UK	11 months to 6 years	VIPP-SD Video-Feedback Intervention to Promote Positive Parenting and Sensitive Discipline modified to VIPP-FC programme for Foster Care	Carer	CBCL SDQ	NS
McEachern AD, 2013	USA	age 2 years 0 months and 2 years 11 months	Family Check-Up (FCU)	Caregivers	ECBI CBCL	S
Sheridan, 2019	Midwest	Kindergarden through 3rd grade	Conjoint behavioural consultation (CBC)	Parents and teachers	BASC-2	NS
Brian, 2017	Canada	16-30 months	Social ABCs coaching	Caregivers	AOSI VABS	NS

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant /Non-Significant
Hanisch, 2010	Germany	3-6 years	The PEP intervention - prevention programme for externalizing problem behaviour	Caregivers, Teachers	CBCL	NS
Olthuis, 2018	Canada	6-12 year	Strongest Families behavioural intervention	Parents	CBCL	S AND NS
Scott, 2005	UK	3-8 years	basic videotape parent training programme developed by Webster-Stratton (Webster-Stratton and Hancock, 1998)	Parents	SDQ	S
Day JJ, 2018	Not specified	2-8 years	TPOL	Parents	ECBI	S
Jensen, 2021	Rwanda	6-36 months	Sugira Muryango (SM) - Strengthen the Family	Caregivers	ASQ MDAT	NS
Baumgartner, 2021	Ghana	Not specified	Mothers and babies Development (iMBC/ECD)	Pregnant mothers	ASQ:SE	NS
Barlow, 2013	USA	Not specified	Family Spirit- a paraprofessional delivered, home-visiting pregnancy and early	Pregnant teen participants	ITSEA	S

			childhood intervention			
Bemanalizadeh, 2022	Iran	0-18 months		Pregnant mothers	CBCL	NS
Xu, 2023	China	6-18 months	The Care Group Manual	Primary caregivers	ASQ	S
Leung, 2022	China	3-6 years	KeySteps@JC Parent-Child Interaction Program	Parents and children	SDQ	NS
Tiwawatpakorn, 2022	Thailand	6-9 years	parenting training group	Caregivers and children	VADPRS	NS
Spijkers W, 2013	Netherlands	9-11 years	Primary Care Triple P (PCTP) program	8 Triple P practitioners (that is, PCH nurses) who were accredited for Triple P levels 2 and 3	SDQ ECBI	S
Kierfeld, 2013	Not specified	3-6 years	bibliotherapeutic intervention	Parents and children	CBCL	S
Feinberg, 2010	USA	Not specified	Family Foundations program	Expectant couples	CBCL	S AND NS
Bhusiri, 2018	Thailand	12 years	Parenting Skills Training Program (PSTP)	Parents	self-reported aggression scale developed by Thongpan	S
Maaskant, 2017	Netherlands	4-12 years	PMTO - Parent Management Training Oregon	Foster parents	CBCL T score SDQ-Screening	NS

Wansink, 2015	Netherlands	3-10 years	PBCM Program - Preventive Basic Care Management	Parents/ Family	SDQ	NS
Berkel, 2021	USA	6-12 years	The Family Check-Up 4 Health (FCU4Health)	Caregivers and children	SDQ	S
Price, 2015	USA	5-12 years	Keeping Foster Parents Trained and Supported-KEEP	Parents	PDR	S
Moss, 2011	Canada	1-5 years	a short-term attachment-based intervention	Parent-child dyads	CBCL	NS
Hautmann, 2013	Netherlands	4-12 years	self-help parenting program	Parents	ECBI	S AND NS
Metcalfe, 2022	Not specified	4-12 years	Fathering Through Change (FTC)	Recently divorced or separated fathers	ECBI-P SDQ-Prosocial	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
Rushton A, 2010	UK	3-8 years	The cognitive behavioural approach, The educational approach.	Adoptive parents	SDQ	NS
Leijten, 2016	Netherlands	4-8 years	BASIC Incredible Years	Parents/Mothers	ECBI- Disruptive child behaviour	S
Day, 2012	UK	2-11 years	Empowering parents, empowering communities	Groups of parents(7-14)	ECBI SDQ Measures as per ITT	S AND NS
Parra-Cardona, 2017	Not specified	4-12 years	Culturally Adapted (CA)Parent Management Training, the Oregon Model (PMTO), Culturally Adapted and Enhanced PMTO (CE)	8-12 parents	CBCL	S AND NS
DuPaul GJ, 2018	USA	3 years-5 years 11 months	Face-to-face, Online -1st session was conducted in person	Families	Conners	NS
Welch, 2015	USA	26-34 weeks gestational age	Family Nurture Intervention (FNI)	Mothers	CBCL	S
Wang, 2019	USA	2 years and 2 years 11 months	Family Check-Up(FCU)		CBCL ITT followed	S AND NS
Fagan, 1999	Not specified	Not specified	Head Start-based father involvement intervention program	Fathers	SSRS -e Social Skills Rating System	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
Yuen, 2002	Canada	3-10 years	Filial Therapy	Parents	Filial Problem Checklist (FPC)	S AND NS
Kale, 1999	USA	3-10 years	Filial Therapy	Parent and child	CBCL	NS
Tew, 2002	Not specified	3-10 years		Parents	CBCL	S
Bernstein, 2014	USA	8-10 years	Friendship Interventions		DBD- The diruptive behaviour disorder rating scle IRS-Parent and teacher impairement rating scales IOWA Conners Rating scale	NS
Karjalainen, 2019	Finland	3-7 years	Incredible Years Preschool BASIC Parenting Program	19–20 parent group meetings and four additional home visits. Groups of 10-12 parents Weekly sessions 2 hr sessions	ECBI CBCL As per ITT	S AND NS
Zhang, 2020	Not specified	4-13 years	ADAPT program	6-15 groups of parents	BASC-2-PRS	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
Nobel, 2022	Netherlands	6-13 years	behavioral parent training Groningen at home [BPTG@HOME]	Parents	ECBI SNAP	S AND NS
Zemp, 2016	Not specified	2-12 years	The Couples Coping Enhancement Training, Triple P	Parents	ECBI	S
Haar, 2021	Afghanistan	8-12 years	Strong Families Program	children and their primary care-givers	SDQ	S
Solan, 2021	Israel	6-18 years	parent behavioral training and schema-enhanced parent behavior therapy (SPBT)	Parents	CBCL	S
Wood, 2021	USA	2-6 years	Child Adult Relationship Enhancement in Primary Care (PriCARE)	parents/ caregivers	ECBI (I, P)	S
Hawk, 2022	USA	2-10 years	PC-CARE	children and caregivers	BASC (Behavior Assessment Scale	S
Roopnarine, 2018	USA	Not specified	BSF-building Strong Families		BPI-Behavioural Problem Index	S
Smith, 2003	USA	4- 10 years	Intensive Filial Therapy Treatment	parent-child	CBCL	S
Morgan, 2017	Australia	3-6 years	Cool Little Kids parenting	parents	* Revised Preschool Anxiety Scale	S

			group program		(PAS-R) * Online Assessment of Preschool Anxiety (OAPA)	
Huijzer-Engbrenghof, 2023	Netherlands	4-8 years	Incredible Years Parenting Intervention	parents	ECBI CBQVSF	S
Whittingham K, 2014	Australia	2-12 years	Stepping Stones Triple P (SSTP) ; Acceptance and Commitment Therapy (ACT)	families	ECBI, SDQ	S
List, 2021	Not specified	newborns and then at the age of 24-30 months	parental investment	female primary caregiver	Social emotional scales	S AND NS
Cunningham CE, 1995	Canada	3 years	Parent training programs (community/ group PT); Clinical/Individual PT)	parents	CBCL (E,I,T)	S
Weisleder, 2019	USA	0-3 years	The Video Interaction Project	parent-child	CBCL	S
Churchill, 2018	USA	4-18 years	PACT (PArent and Child Together)	parent-child dyads	ERC (Emotion Regulation Checklist)	S
Speidel, 2020	USA	3-6 years	RET (reminiscing and emotion training)	parent-child dyads	CBCL; ECBI	S
Verduyn, 2003	UK	2.5-4 years	CBT	mother and child	Assessment of Children's Emotion Skills (ACES)	NS

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
Hooper, 2017	Not specified	5-6 years	couple and family therapy program	families	CBCL, SDQ	S
Fongaro, 2023	France	6-20 years	NVR (Non violent resistance)	parents	NYPRS, CPRS-R	NS
Brotman, 2005	USA	5-11 years	family-based group intervention	families	CBCL (Dutch Version)	S
Maaskant, 2016	Netherlands	4-12 years	PMTO (Parent Management Training Oregon)	parents	ECBI, CBCL	NS
Duppong Hurley, 2020	Not specified	Not specified	IHFS intervention		ECBI	NS
Bagner, 2007	USA	3-6 years	PCIT (Parent Child Interaction Therapy)	primary caregiver and child	ECBI, SDQ	S
Ward, 2020	Africa	2-9 years	Parenting for Lifelong Health	parents	VABS (Vineland Adaptive Behavior Scale)	NS
Hutchings, 2007	UK	36-59 months	Webster-Stratton Incredible Years basic parenting programme	parents	CBCL, ECBI	S
Reitzel, 2013	Canada	38- 82 months	Functional Behavioral Skill Training (FBST)	parent and child	ECBI	S
Webster-Stratton, 1998	USA	52-60 months	PARTNERS parent training group	parents	ITSEA (Infant Toddler Social Emotional Assessment)	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
Scott, 2010	UK	6 years	parenting group intervention: SPOKES program	parents	ECBI	S
Booth-LaForce, 2020	USA	10-30 months	PFR (Promoting First Relationships Preventive Intervention	parents	CBCL	NS
Morawska, 2017	Australia	2-10 years	Triple P	parents	ECBI	S
Gardner, 2007	USA	17-24 months	Family Check-up	parents	SSIS, CAFAS, PECFAS	S
Skowron, 2024	USA	3-7 years	PCIT (Parent Child Interaction Therapy)	parents	ECBI	S
Akin, 2018	USA	3-16 years	PMTO (Parent Management Training Oregon)	parents	CBCL, ECBI	S
Westrup, 2015	Australia	4-12 years	Triple P	parents	CBCL	NS
Jouriles, 2009	USA	4 to 9 years	Project Support Condition	parents	ECBI, DBC	S
Jouriles, 2001	USA	4-9 years	multiccomponent family intervention	parents		S
Plant KM, 2007	Australia	0-6 years	SSTP-E, SSTP-S	parents	BASC (Behavior and Social Competence)	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
O'Connor, 2013	UK	4-6 years	Incredible Years	parents	ECBI	S AND NS
Tolan, 2004	USA	school-going	Safe Children Preventive Intervention	parents	CBCL	NS
Porzig-Drummond, 2014	Australia	2-12 years	DVD, Emotion Coaching	parents	ECBI	S
Reijneveld, 2017	Netherlands	Newborns	FCC (Family Centered Care)	parents	ECBI	NS
Breitenstein SM, 2012	USA	2-5 years	Chicago Parent Program	parents	CBCL	S
Matalon, 2023	Israel	3-6 years	PPOP (poitive Parenting for Oppositional Preschoolers)	parents	ECBI	S
Irvine, 1999	USA	12 years	Adoloscent Transition Program	parents	ECBI	S
Bor W, 2002	Australia	3 years	Triple P	parents	Parent daily Report (PDR)	NS
de Jong, 2023	Netherlands	6-10 years	Self help aprenting program	parents	ECBI	NS
Sheridan, 2013	USA	6-8 years	CBC: Conjoint Behavior Consultation	parent, teachers and children	CBCL	S
Bodenmann G, 2008	Switzerland	2-12 years	Triple P, CCET	parents	CBCL	S

Author & year	Country	Age of Child	Intervention name	Delivered to	Outcome	Significant/ Non-Significant
Webster-Stratton, 2008	USA	3-8 years	Incredible Years(IY) Parent Training program	parents	ASQ-SE (Ages and Stages Questionnaire-Social-Emotional)	S
Herman, 2011	USA	4-8 years	Incredible Years	parents	CBCL	NS
Twohig, 2021	Ireland	preterm infants born before 37 weeks of gestation	PIPPA program	mothers	ECBI	S AND NS
Hanisch, 2014	USA	3-6 years	Prevention program for preschool children with Externalizing Problem behavior (PEP)	parents	CBCL, ECBI	S
Sanders, 2000	Australia	3 years	EBFI,SBFI, SDBFI	parents	ECBI	S
Webster-Stratton, 1997	USA	4-7 years	parent training program	families	ECBI	S
Wilson, 2012	Australia	4.0-5.11 years	Tuining in to Kids	Parents	CBCL	S
Havighurst, 2010	Australia	46-68 months	Tuining in to Kids	Parents	Daily Rated Problem Behaviours can be considere	S

					d Ecological Momentary Assesssment (EMA) SWAN - The Strengths and Weaknesses of ADHD symptoms and Normal behavior rating scale ODD subscale of the Dutch version of the Disruptive Behavior Disorder Rating Scale (DBDRS)	
Hiscock, 2008	Australia	6-7 months	Universal Intervention	Mothers	ADHD ratings on the Conners' Rating Scales New York Parent and Teacher Rating Scales (NYRS) for Physical Aggression and Defiant Behaviors	NS
Hornstra, 2021	Netherlands	4-12 years	antecedent-based condition (AC), consequent-	Parents/ caregivers	BASC-2	S

			based condition (CC)			
Forehand R, 2016	USA	3-4.11 years	New forest parenting	Parent and child jointly in each session	SDQ	S AND NS

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