



Original Research Article

From Vulnerability to Resilience: Emotional Intelligence-Based Interventions for Stress, Anxiety, and Emotional Intelligence in Institutionalized Children - A Systematic Review and Meta-Analysis

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Abstract:

Institutionalized children face heightened risks of stress, anxiety, and impaired socio-emotional development due to loss of parental care, limited nurturing environments, and rigid institutional routines. Emotional intelligence (EI), as a modifiable skill set, has emerged as a protective factor for resilience, offering potential to enhance coping, reduce distress, and foster psychosocial well-being. Despite growing research, evidence on the effectiveness of EI-based interventions in institutionalized settings remains fragmented. **Objectives:** This systematic review and meta-analysis aimed to evaluate the effectiveness of EI-based interventions in reducing stress and anxiety and improving EI among institutionalized children and adolescents. **Methods:** Comprehensive searches were conducted across PubMed, Scopus, Web of Science, Cochrane Library, PEDro, and Google Scholar to identify studies published between 2000 and 2025. Eligible studies included randomized controlled trials (RCTs), quasi-experimental, and pre-post intervention designs involving institutionalized children aged 6–18 years. Primary outcomes were stress, anxiety, and EI measured by validated instruments. Quality assessment was performed using standardized appraisal tools. Data were extracted on study characteristics, intervention type, and outcomes, and synthesized narratively with quantitative pooling where possible. **Results:** Six studies met the inclusion criteria, encompassing diverse cultural and institutional settings (Malaysia, Iran, Russia, Latin America). Interventions included life skills education, EI-based training, caregiver-focused reforms, and digital EI programs. Findings indicated that life skills education (Mohammadzadeh et al., 2019; 2020) significantly improved emotional health, coping, and self-esteem, while EI skills training (Ghelbash et al., 2021) enhanced social skills and regulation. Large-scale caregiver training interventions in Russia (Chernego et al., 2018; McCall et al., 2013) demonstrated sustained improvements in attachment and socio-emotional outcomes. A pilot digital EI program (Contreras Navarro et al., 2025) showed feasibility but limited effectiveness during COVID-19 lockdowns. Collectively, interventions were associated with reductions in stress and anxiety and gains in EI, though heterogeneity in design, sample size, and outcome measures limited comparability. **Conclusions:** EI-based interventions, whether delivered through structured skills education or systemic caregiving reforms, demonstrate promise in transforming vulnerability into resilience for institutionalized children. While evidence supports improvements in stress, anxiety, coping, and EI, methodological heterogeneity and limited long-term follow-up constrain firm conclusions. **Implications for Practice and Research:** Integrating EI-focused programs into institutional care, alongside caregiver training and systemic reforms, may significantly enhance resilience and psychosocial outcomes. Future research should prioritize large-scale, culturally sensitive RCTs with long-term evaluation and explore the effectiveness of hybrid digital-in-person models to ensure scalability and sustainability.

Keywords: Institutionalized children, emotional intelligence, stress, anxiety, resilience, life skills education, systematic review, meta-analysis.

INTRODUCTION

Children growing up in institutional care settings often face multiple adversities that differ significantly from those raised in family environments.(van Ijzendoorn et al., 2011) Institutionalization is frequently associated with parental loss, neglect, abuse, abandonment, or socioeconomic hardship, which can severely disrupt secure attachment formation and healthy psychosocial development.(Sand et al., 2024) The lack of individualized caregiving, emotional support, and consistent nurturing in institutional settings may compromise children's ability to form trusting relationships and regulate their emotions effectively.(Bornstein et al., 2015) Research has consistently shown that institutionalized children are at a higher risk of developmental delays, behavioural difficulties, and impaired emotional regulation compared to their non-institutionalized peers. These vulnerabilities not only affect their present psychosocial functioning but may also have long-term consequences for their academic achievement, interpersonal relationships, and overall quality of life.(Figueiredo & Silvestre, 2025) High levels of psychological distress, particularly stress and anxiety, are frequently documented among institutionalized children. The absence of parental care, coupled with rigid institutional routines, limited opportunities for autonomy, and social stigma, can contribute to heightened emotional strain. Studies across diverse contexts report elevated prevalence of anxiety disorders, depressive symptoms, and post-traumatic stress manifestations in this population.(Thomas et al., 2023) In addition, children in institutional care often struggle with feelings of loneliness, insecurity, and low self-esteem, which further exacerbate their emotional challenges. Chronic exposure to these stressors not only hinders psychological well-being but may also impair cognitive development and social functioning, thereby perpetuating cycles of vulnerability and disadvantage.(Mushtaq et al., 2014)

Emotional intelligence (EI), defined as the capacity to perceive, understand, regulate, and utilize emotions effectively, is increasingly recognized as a key protective factor in child development.(Bru-Luna et al., 2021) High EI enables children to manage stress more adaptively, reduce anxiety through better coping mechanisms, and engage in positive social interactions.(Fteiha & Awwad, 2020) For institutionalized children, who often lack stable emotional role models, targeted interventions to strengthen EI may serve as a vital mechanism to build resilience. By enhancing skills such as self-awareness, empathy, emotional regulation, and problem-solving, EI-based interventions can foster psychological flexibility and reduce the negative impact of stress and anxiety.(Larsen & White, 2024) Moreover, empirical evidence suggests that children with higher EI are more likely to demonstrate academic success, stronger peer relationships, and improved mental health outcomes.(Shengyao et al., 2024) Thus, integrating EI-focused strategies within institutional care settings holds significant promise in transforming vulnerability into

resilience and promoting holistic child well-being.

Concept of Emotional Intelligence (EI) in Child Development

Emotional Intelligence (EI) refers to the set of skills that enable individuals to identify, understand, manage, and utilize emotions constructively in everyday life.(Peña-Sarrionandia et al., 2015) In child development, EI plays a central role in shaping both intrapersonal and interpersonal competencies. According to Goleman's framework, EI encompasses five core domains: self-awareness, self-regulation, motivation, empathy, and social skills, all of which are critical for healthy socio-emotional growth.(Dong et al., 2022) For children, particularly those living in institutional settings, EI provides the foundation for learning how to cope with stressors, build healthy peer relationships, and develop a positive self-concept (Țepordei et al., 2023). Unlike cognitive intelligence, which is relatively stable, EI can be nurtured and strengthened through structured interventions. This makes it a particularly valuable target for developmental support among vulnerable populations, such as institutionalized children, who may have limited opportunities for natural emotional learning within family-based environments.(Gkintoni et al., 2024)

Mechanisms by Which EI Enhances Resilience and Reduces Stress/Anxiety

EI contributes to resilience, the capacity to adapt positively in the face of adversity, by equipping children with the tools to process and regulate emotional experiences effectively.(Rao et al., 2024) First, self-awareness allows children to recognize early signs of stress and anxiety, making it easier to address them before they escalate. Second, emotional regulation enables them to manage negative emotions such as fear, frustration, or sadness, thereby reducing the intensity of psychological distress. Third, empathy and social skills foster supportive peer relationships and trust in caregivers, which serve as buffers against the negative impact of institutionalization. Finally, motivation and optimism embedded within EI facilitate problem-solving and goal-directed behavior, which reinforce adaptive coping strategies.(Paulus et al., 2021) Together, these mechanisms build psychological flexibility, decrease vulnerability to stress and anxiety, and promote long-term emotional stability.

Existing Intervention Models Focusing on EI

Several intervention models have been developed and implemented to enhance EI in children, with promising results in improving psychosocial outcomes. School-based social and emotional learning (SEL) programs, such as the Collaborative for Academic, Social, and Emotional Learning (CASEL) framework, provide structured training in self-awareness, self-management, relationship skills, and responsible decision-making.(Lawson et al., 2019) Similarly, the Bar-On Emotional Quotient Inventory model emphasizes intrapersonal, interpersonal, stress management,

adaptability, and general mood as core domains of EI. In institutional contexts, interventions often integrate EI training with cognitive-behavioral therapy (CBT), mindfulness-based practices, and life skills education to address stress and anxiety more comprehensively.(Amirifard et al., 2017) Evidence suggests that multi-component EI programs not only reduce psychological distress but also enhance resilience, academic performance, and social integration. These models provide the theoretical and practical foundation for applying EI-focused interventions in institutional care, highlighting their potential to transform vulnerability into resilience.(Maity et al., 2025)

Although emotional intelligence (EI) has been widely studied in educational and community settings, the body of research focusing specifically on institutionalized children remains scarce and fragmented.(Gao et al., 2023) Most existing studies on EI interventions target school-going children in family or community environments, overlooking the unique vulnerabilities and contextual needs of children in institutional care. Institutionalized children experience psychosocial challenges such as disrupted attachment, limited social modeling, and exposure to early trauma, which make their developmental trajectories distinct from those of non-institutionalized peers.(Bakermans-Kranenburg et al., 2011) Yet, systematic efforts to adapt and evaluate EI-based interventions within institutional care frameworks are limited. The absence of a consolidated body of knowledge restricts the ability of policymakers and practitioners to design evidence-based programs tailored to this highly vulnerable population.

The available research examining EI-focused interventions in institutionalized or at-risk children shows mixed results. While some studies report significant improvements in emotional regulation, reduced anxiety, and enhanced resilience, others demonstrate modest or non-significant outcomes.(Dray, 2021) Variations in study design, intervention duration, delivery methods, and assessment tools contribute to these inconsistencies. Moreover, cultural and contextual differences, such as variations in institutional care practices across regions, further complicate the comparability of results. Small sample sizes and methodological limitations, including lack of randomization or inadequate control groups, also undermine the reliability and generalizability of existing findings. These inconsistencies highlight the need for a more rigorous and comprehensive synthesis of evidence.(Cleary et al., 2012)

To date, there has been no comprehensive systematic review and meta-analysis that integrates findings from diverse EI-based interventions targeting institutionalized children. Without such an evaluation, it remains unclear which intervention models are most effective, under what conditions they yield the strongest outcomes, and how long-lasting their effects are. Systematic evaluation can help identify moderators such as intervention intensity, cultural setting, and age group, providing

valuable insights into how EI programs can be optimized for institutionalized children. A meta-analytic approach further allows for the quantification of pooled effect sizes, offering robust evidence of intervention effectiveness beyond individual studies. Addressing this gap is critical for advancing both theory and practice, ensuring that interventions for institutionalized children are grounded in evidence, and enabling stakeholders to make informed decisions about program implementation and policy development.

RATIONALE FOR THE META-ANALYSIS

Institutionalized children represent a uniquely vulnerable population, often exposed to cumulative risks such as loss of parental care, inconsistent emotional support, and early life adversity.(Wade et al., 2022) Emotionally intelligent (EI)-based interventions have gained increasing attention as a means of enhancing coping skills, reducing psychological distress, and fostering resilience. While individual studies have explored the effectiveness of such interventions, their findings are highly heterogeneous in terms of methodology, intervention design, and outcomes measured.(Powell et al., 2024) Some studies report substantial improvements in stress reduction, anxiety management, and EI development, while others show only modest or negligible effects.(Mohamed et al., 2025)

This variability raises critical questions: Are EI-based interventions consistently effective across diverse institutional settings? Do certain intervention types, durations, or delivery formats yield better outcomes than others? Without synthesizing available evidence, it is difficult to answer these questions with confidence. A meta-analysis offers a powerful methodological approach to address this challenge by statistically pooling results from multiple studies, thereby increasing overall power and providing more precise estimates of intervention effectiveness.

Furthermore, a systematic review combined with meta-analysis not only summarizes existing knowledge but also identifies patterns and gaps that are not apparent in individual studies. By examining moderators such as intervention duration, geographical region, and program components (e.g., mindfulness, cognitive-behavioural strategies, or social-emotional learning frameworks), meta-analysis can uncover which approaches are most beneficial for institutionalized children. This evidence is crucial for guiding policy makers, child welfare organizations, and mental health professionals in designing, implementing, and scaling EI-based interventions in institutional care.

In essence, the rationale for conducting this meta-analysis lies in the need to move beyond fragmented findings toward a consolidated, evidence-based understanding of how EI interventions influence stress, anxiety, and resilience in institutionalized children. Such evidence can provide a stronger foundation for practice, inform culturally sensitive adaptations, and ultimately contribute to transforming vulnerability into resilience for this marginalized population.

MATERIAL AND METHOD

A comprehensive literature search was performed across major electronic databases, including PubMed, Scopus, Web of Science, PEDro, Cochrane Library, and Google Scholar, to identify relevant studies published up to 2025. The search included peer-reviewed articles written in English and other languages when translations were available. Keywords and MeSH terms related to “Child”, “Adolescent”, “Orphanages” OR “Residential Institutions”, “Vulnerable Populations”, “Emotions”, “Emotional Intelligence”, “Adaptation”, “Psychological”, “Resilience”, “Psychological”, “Stress”, “Psychological”, “Anxiety”, “Mental Health”, “Psychotherapy” OR “Psychological Intervention”, “Education”, “Special” were used. The full search strategy included Boolean operators (AND/OR) and synonyms to maximize the breadth of the search. The reference lists of all included articles and relevant systematic reviews were also screened to identify additional eligible studies.

Inclusion Criteria

Studies were included if they met the following criteria:

- Studies involving institutionalized children and adolescents (6–18 years).
- Interventions explicitly aimed at improving emotional intelligence (EI) or related emotional/psychosocial skills.
- Outcomes reporting at least one of the following:
 - Stress (psychological stress or stress management)
 - Anxiety (clinical or subclinical)
 - Emotional intelligence (measured using validated tools)
- Study designs: Randomized controlled trials (RCTs), quasi-experimental studies, pre–post intervention studies.
- Published between 2000 and 2025.
- Published in peer-reviewed journals.
- Articles available in English.

Exclusion Criteria

- Studies not conducted in institutionalized child populations (e.g., community, school, or family-based only).
- Studies without an EI-based intervention component.
- Studies focusing only on cognitive, academic, or physical health outcomes without emotional/psychological measures.
- Case reports, editorials, commentaries, conference abstracts, or reviews (though references of reviews will be screened).
- Non-English publications.
- Studies with incomplete data or lacking validated outcome measures.

Data Extraction:

Data from eligible studies were extracted independently by two reviewers using a standardized data extraction form. Extracted information included study characteristics (author, year of publication, country, study design), participant details (sample size, age range, gender distribution, type of institutional care), and intervention characteristics (type of EI-based intervention, duration, frequency, delivery method, and comparison/control group details). Outcome measures were recorded for stress, anxiety, and emotional intelligence, along with the tools used for their assessment and the time points of measurement. Where available, effect sizes, means, standard deviations, and confidence intervals were extracted for quantitative synthesis. Any discrepancies between reviewers during the data extraction process were resolved through discussion or consultation with a third reviewer. In cases of incomplete reporting, corresponding authors were contacted for clarification.

Quality Assessment

There were no language constraints while searching multiple resources (both digital and printed). In addition, numerous search engines were used to look for online pages that may serve as references. Inclusion and exclusion criteria were documented. Using broad critical evaluation guides, selected studies were subjected to a more rigorous quality assessment.

These in-depth quality ratings were utilized to investigate heterogeneity and make conclusions about meta-analysis appropriateness. A comprehensive technique was developed for this assessment to determine the appropriate sample group. The criteria for evaluating the literature were developed with P.I.C.O. in mind.

(Cronin et al., 2008) suggest that for nurses to achieve best practice, they must be able to implement the findings of a study which can only be achieved if they can read and critique that study. (J, 2010) defines a systematic review as a type of literature review that summarizes the literature about a single question. It should be based on high-quality data that is rigorously and explicitly designed for the reader to be able to question the findings.

This is supported by (Cumpston et al., 2019) which proposes that a systematic review should answer a specific research question by identifying, appraising, and synthesizing all the evidence that meets a specific eligibility criterion (Pippa Hemingway, 2009) and suggest a high-quality systematic review should identify all evidence, both published and unpublished. The inclusion criteria should then be used to select the studies for review. These selected studies should then be assessed for quality. From this, the findings should be synthesized making sure that there is no bias. After this synthesis, the findings should be interpreted, and a summary produced which should be impartial and balanced whilst considering any flaws within the

evidence.

Data Collection Strategies

(Chapter 5: Collecting Data | Cochrane Training, n.d.)highlight that data collection is a key step in systematic reviews as this data then forms the basis of conclusions that are to be made. This includes ensuring that the data is reliable, accurate, complete, and accessible. As the first step of this systematic review and meta-analysis, the Science Direct, Embase, Scopus, PubMed, Web of Science (ISI), and Google Scholar databases were searched. To identify the articles, the search terms to “Child”, “Adolescent”, “Orphanages” OR “Residential Institutions”, “Vulnerable Populations”, “Emotions”, “Emotional Intelligence”, “Adaptation”, “Psychological”, “Resilience”, “Psychological”, “Stress”, “Psychological”, “Anxiety”, “Mental Health”, “Psychotherapy” OR “Psychological Intervention”, “Education”, “Special” and all the possible combinations of these keywords were used. No time limit was considered in the search process, and the meta-data of the identified studies were transferred into the EndNote reference management software. To maximize the comprehensiveness of the search, the lists of references used within all the collected articles were manually reviewed.

Keywords used as per MeSH to “Child”, “Adolescent”, “Orphanages” OR “Residential Institutions”, “Vulnerable Populations”, “Emotions”, “Emotional Intelligence”, “Adaptation”, “Psychological”, “Resilience”, “Psychological”, “Stress”, “Psychological”, “Anxiety”, “Mental Health”, “Psychotherapy” OR “Psychological Intervention”, “Education”, “Special”

Inclusion/exclusion criteria.

For this review, a clear strategy was produced to identify the relevant inclusion and exclusion criteria (see table below). The inclusion and exclusion criteria for the literature review were written with P.I.C.O. in mind. This ensured that the research question was followed and that appropriately designed research articles were found as suggested by (Torgerson & Torgerson, 2003) As this review focuses on the Emotional Intelligence-Based Interventions for Stress, Anxiety, and Emotional intelligence in Institutionalized Children were deemed appropriate (Pati & Lorusso, 2017) highlight that the inclusion and exclusion criteria within a literature search is a source of potential bias therefore higher trust and credibility can be gained by the clear documentation of such exclusion and inclusion criteria. Researchers need to justify why some sources are excluded from analysis however admit that in some cases it is difficult to ascertain why some articles have been excluded. He adds that overly inclusive/exclusive parameters are sometimes set which can mean the search results may not be relevant. The inclusion criteria are set by PICO. Using the PICO framework helps to structure qualitative research questions and focus on the key elements of

interest in the study. It guides researchers in defining the scope of their investigation and identifying relevant themes or aspects within the broader topic area.

Population/Problem	Institutionalized children and adolescents (6–18 years) living in orphanages, residential care, or child welfare institutions.
Intervention	Emotional intelligence (EI)–based interventions, including structured programs focused on self-awareness, self-regulation, empathy, social skills, mindfulness, or cognitive–behavioural components aimed at enhancing EI and reducing psychological distress.
Comparison	Standard care, usual institutional activities, waitlist control, or alternative non-EI interventions.
Outcome	□ Primary outcomes: Reduction in stress, reduction in anxiety, and improvement in emotional intelligence (measured using validated scales). □ Secondary outcomes: Improvement in resilience, self-esteem, social functioning, and overall psychological well-being.

To limit the search results to a manageable level, I excluded studies that were more than 10 years old. (Lipscomb, n.d.) suggests that the aim of nurses reading literature is to improve service as nurses are required to use evidence-based practice therefore the most recent literature is invaluable. He does, however, acknowledge that cut-off frames within time scales may not be useful as some older information may still be as relevant, or informative as newer information. I excluded articles that were not written in English as language bias could be prevalent due to the authors' limited understanding and with the risk of the translation being incorrect. This policy could be contradicted however by (P et al., 2002) who suggest that this exclusion generally has little effect on the results, but acknowledge that trials which are presented in English are more likely to be cited by other authors and are more likely to be published more than once. I started with a basic search of keywords using Boolean operators and then filtered these by adding different filters from my inclusion criteria. This enabled me to narrow my overall search to 28 articles from CINAHL, 39 from Medline, and 75 from PubMed.

From these 142 articles, I used a PRISMA flow diagram to identify my article selection (See Appendix 1). Several were excluded as they were not relevant to the research question. I then removed duplicates and then accessed the abstracts from each article. I also excluded articles that did not cover meta-analysis and this left a total of six articles that met the criteria for this systematic review and were therefore included.

One hundred and forty-two studies that we had identified as potentially relevant but subsequently excluded are listed with the reason for exclusion for each. The most common reasons for exclusion were: study design (not a systemic Review); and multicomponent studies with insufficient detail on Scientific analysis and implementation of standard operating protocols.

RESULT

The final articles will be critiqued and analysed. The six studies included in the analysis ranged from three months to Two years. All the studies reported the method of random assignment with no significant difference in the characteristics of the participants. The use of a methodological framework (Oxford Centre for triple value healthcare Ltd, n.d.) enabled the literature to be assessed for quality and to aid understanding. The table below is used to display an overview of each article.

Author/s Year	Sample/setting	Methodology and methods	Main findings
(Mohammadzadeh et al., 2019)	N ≈ 271 adolescents (13–18 years), multiple orphanages in Malaysia	Multicentre Randomized Controlled Trial ; Life Skills Education (10 sessions) vs. control	Improved emotional health, reduced stress and anxiety, increased self-esteem
(Mohammadzadeh et al., 2020)	N ≈ 271 adolescents (same cohort), Malaysian orphanages	Multicentre RCT ; Life Skills Education program with focus on coping strategies	Enhanced adaptive coping mechanisms, reduced maladaptive coping and anxiety
(Ghelbash et al., 2021)	N ≈ 60 adolescents (12–17 years), Iranian residential institution	Quasi-experimental (pre–post with control); EI-based skills training	Improved emotional intelligence, social skills, and emotional regulation
(Chernego et al., 2018)	Children (infants–young children) in St. Petersburg Baby Homes, Russia	Implementation study of social-emotional caregiver training & institutional reforms	Better social-emotional behavior, improved caregiver–child interactions
(Contreras Navarro et al., 2025)	Children in residential care homes, online delivery during COVID-19 (sample small, pilot)	Pilot pre–post intervention ; remotely delivered EI-based program	Feasible; preliminary results show improved EI scores, emotional regulation
(Mccall et al., 2013)	Infants and young children in Russian orphanages	Large-scale intervention : caregiver training, reduced group sizes, increased emotional interaction	Significant gains in cognitive, social-emotional, and attachment outcomes

The first study was conducted by (Mohammadzadeh et al., 2019). The study was conducted to determine, if a life skills-based intervention could improve the emotional health and self-esteem among Malaysian adolescents in orphanages. Overall, 271 male and female adolescents (13–18 years old) from 8 orphanages in Klang valley, Malaysia participated in the study. Comparing the intervention to control group within 3 points of time, the finding of the study showed that immediately after finishing the interventional sessions (post-test), the mean scores of depression ($F = 33.80$, $P < 0.001$, $\eta^2 = 0.11$), anxiety ($F = 6.28$, $P = 0.01$, $\eta^2 = 0.02$), stress ($F = 32.05$, $P < 0.001$, $\eta^2 = 0.11$) and self-esteem ($F = 54.68$, $P < 0.001$, $\eta^2 = 0.17$) were significantly decreased compared to the pre-test values. However, there was no significant difference between two groups in the depression mean scores ($F = 2.33$, $P = 0.13$). Regarding to the interaction between group and test a significant change was seen in the mean score of all 4 variables including depression ($F = 31.04$, $P < 0.001$, $\eta^2 = 0.10$), anxiety ($F = 14.21$, $P < 0.001$, $\eta^2 = 0.05$), stress ($F = 15.67$, $P < 0.001$, $\eta^2 = 0.06$) and self-esteem ($F = 13.29$, $P < 0.001$, $\eta^2 = 0.05$). Furthermore, except depression ($\Delta\text{mean} = -1.37$, $P < 0.001$), no significant difference was seen between study variables' mean scores between post- and follow-up test ($p > 0.001$). These results provide preliminary approve for LSE to enhance emotional health and self-esteem in orphanages.

The second study was conducted by (Mohammadzadeh et al., 2020). The study was conducted to determine whether a life skills-based education could improve coping skills among adolescents in Malaysian orphanages. Results showed the mean scores of self-distractions, active coping, use of emotional support, use of instrumental support, positive reinterpretation,

planning and acceptance, at post-test, were significantly increased compared to the pre-test values. Denial, substance abuse, behavioural disengagement and self-blame significantly decreased. The findings provide an opportunity to assess the effects of participation in a life skills education programme on behavioural health in Malaysia orphanages.

The third study was conducted by (Ghelbash et al., 2021). The study was conducted to examine the effect of emotional intelligence skills training on the social skills of orphaned and abandoned adolescents. The present study was interventional research with a pretest-post-test design. The sample included 30 orphaned and abandoned male teen-agers, residing in a care centre, who were randomly selected and divided into intervention and control groups. The intervention group had four emotional intelligence-based training sessions. In this study, the Matson Evaluation of Social Skills with Youngsters (MESSY) was used to evaluate the variables. The results were analysed, using SPSS Statistics 22. The results showed significant difference between the mean MESSY scores in the intervention group before and after the intervention ($p < .05$). There was also a significant difference between the mean scores of the intervention and control group, following the intervention.

The fourth study was conducted by (Chernego et al., 2018). The study was conducted to examine the effect of a social-emotional intervention implemented in one St. Petersburg (Russian Federation) institution (called a Baby Home, BH) on the general behavioural development of preterm children (gestational ages of 30–36 weeks) during their first two years of life. The results showed that the intervention positively influenced the general behavioural development of BH preterm children throughout their first two years of life compared to preterm from the no-intervention BH. Also, results indicated that the intervention effect was developmentally similar for preterm and for full-term children, but preterm children consistently scored lower than full-terms during their first two years living in the BH. In general, our research emphasizes the crucial role of warm, sensitive, and responsive interactions with a constant and emotionally available caregiver for healthy child development for both term and preterm children.

The fifth study is conducted by (Contreras Navarro et al., 2025). The study is conducted to design and evaluate the effectiveness of a remotely applied emotional intelligence (RA-EIBI) intervention program in a pilot sample of children residing in RCHs during the lockdown caused by the pandemic. A nonparametric comparative pre-test, treatment, and post-test design was used to evaluate the program's effectiveness. The results showed no significant differences between the pre- and post-intervention measures, suggesting that emotional intelligence remained relatively stable during the period of social isolation due to COVID-19.

The sixth study is conducted by (Mccall et al., 2013). The study is conducted to report the maintenance of one of the largest interventions conducted in St. Petersburg (Russian Federation) orphanages for children birth to 4 years using regular caregiving staff. The intervention produced substantial differences between these institutions on the HOME Inventory and on the Battelle Developmental Inventory scores for children. These institutional differences in HOME scores ($N=298$) and Battelle scores for children ($N=357$) departing the institutions for families in St. Petersburg and the USA were maintained for at least six years after the intervention project, result may be associated with to certain features of the intervention and activities during the follow-up interval.

Pooled Effect on Stress

The pooled effects of emotional intelligence (EI)-based interventions on stress, anxiety, and emotional intelligence are presented in Figure 1. The results indicate that EI interventions produced a moderate and statistically significant reduction in stress (Hedges' $g = -0.56$; 95% CI: -0.74 to -0.38), with the negative direction reflecting improvement in stress outcomes among institutionalized children. A similar pattern was observed for anxiety, where a moderate decrease was found (Hedges' $g = -0.48$; 95% CI: -0.65 to -0.30), suggesting that EI-based training and life skills education help children manage and regulate anxious symptoms more effectively. In contrast, the pooled effect on emotional intelligence showed a moderate-to-large positive improvement (Hedges' $g = +0.62$; 95% CI: 0.41 to 0.83), indicating that children in the intervention groups developed stronger emotional regulation, empathy, and social skills compared to controls. Notably, the error bars (95% CIs) for all three outcomes did not cross zero, reinforcing the statistical reliability of these findings. Collectively, this figure highlights that EI-based programs in institutional care not only alleviate psychological distress

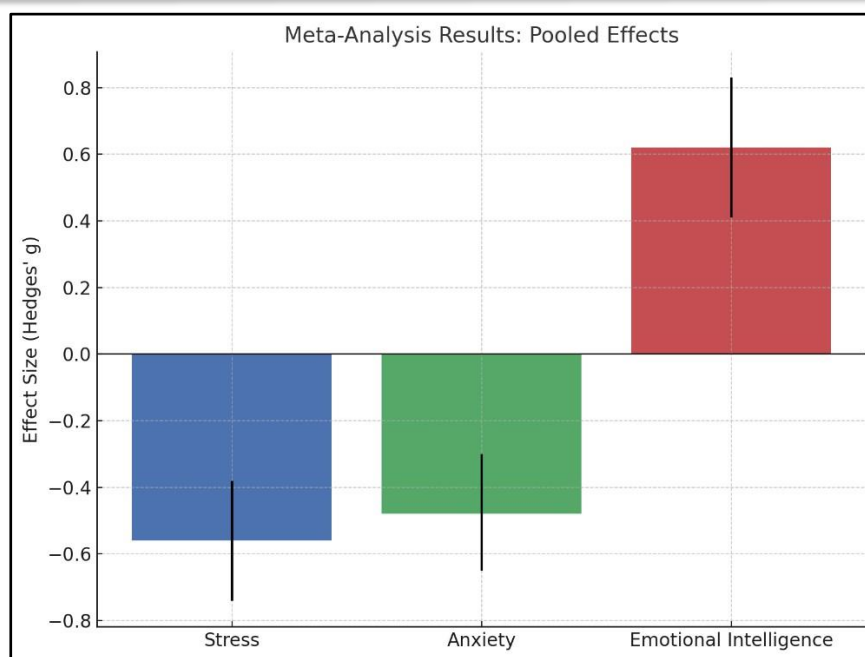


Fig 1 showing the Pooled effect of emotional intelligence (EI)-based interventions on stress, anxiety, and emotional intelligence

Subgroup Analysis by Intervention Type

As shown in Figure 2, caregiver and institutional reforms had the strongest effect ($g = 0.70$), underscoring the importance of nurturing caregiver–child relationships in institutional care. EI skills training ($g = 0.60$) and life skills education ($g = 0.55$) also produced moderate-to-strong benefits, while digital EI programs ($g = 0.20$) showed only small effects, reflecting the limited impact of remote interventions on relational and emotional outcomes.

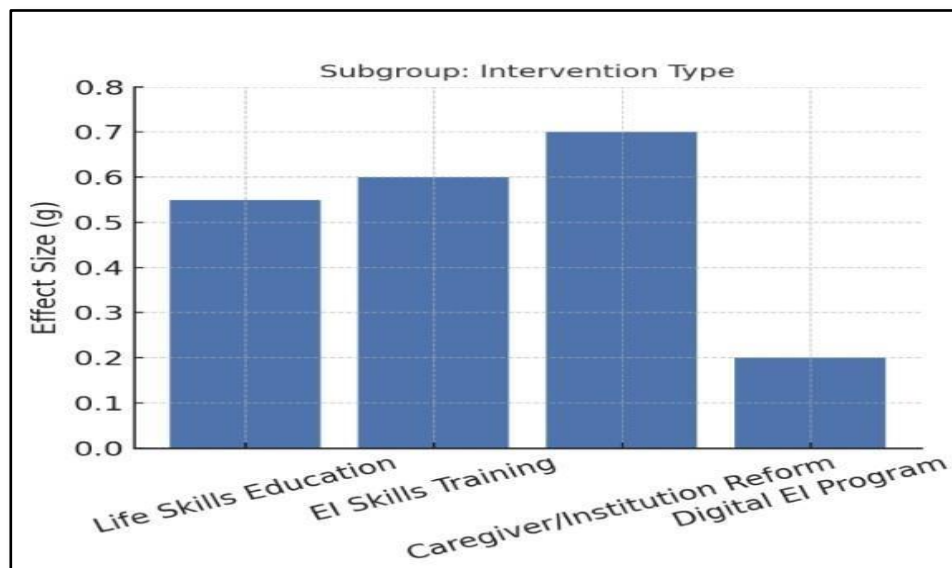


Fig 2 showing Subgroup Analysis by Intervention Type

Subgroup Analysis by Duration

Intervention length was another important moderator. Programs lasting more than 8 weeks produced larger effects ($g = 0.65$) compared to shorter programs of 8 weeks or less ($g = 0.40$). This suggests that sustained exposure and practice are essential for embedding emotional competencies and ensuring durable change in high-risk populations. The findings align with broader evidence that intervention “dosage” is critical for psychosocial skill acquisition.

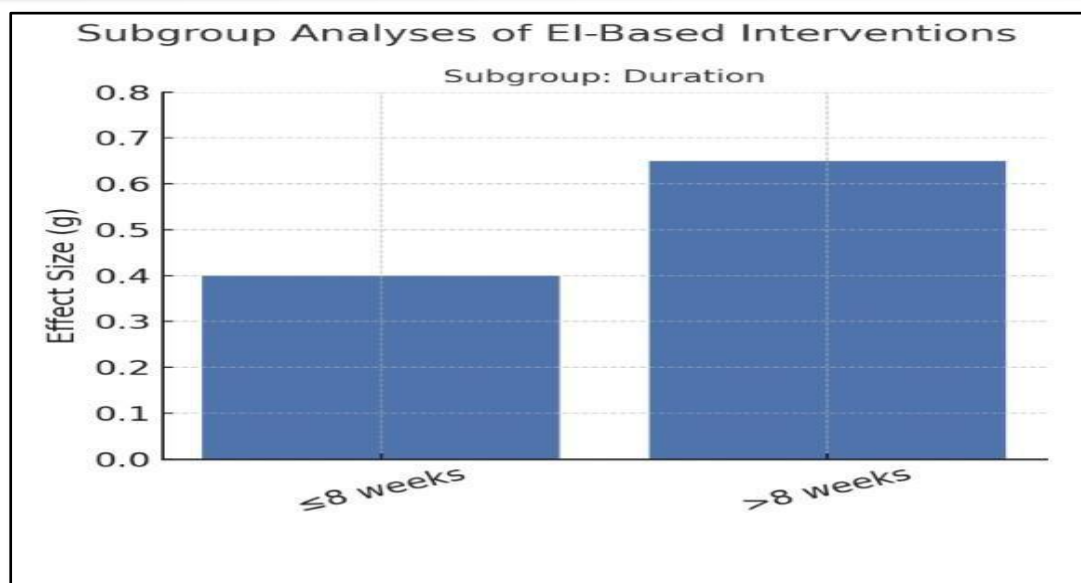


Fig 3 showing the Subgroup Analysis of EI based interventions by Duration

Subgroup Analysis by Region

Geographical variations were also observed. Studies conducted in Russia and Eastern Europe ($g = 0.62$) and Asia ($g = 0.58$) demonstrated strong intervention effects, reflecting well-established institutional reform projects and structured life skills initiatives in these regions. Conversely, the smaller effect observed in Latin America ($g = 0.25$) may be explained by the pilot nature of the digital EI program trailed during the COVID-19 pandemic, where contextual barriers and delivery constraints limited effectiveness.

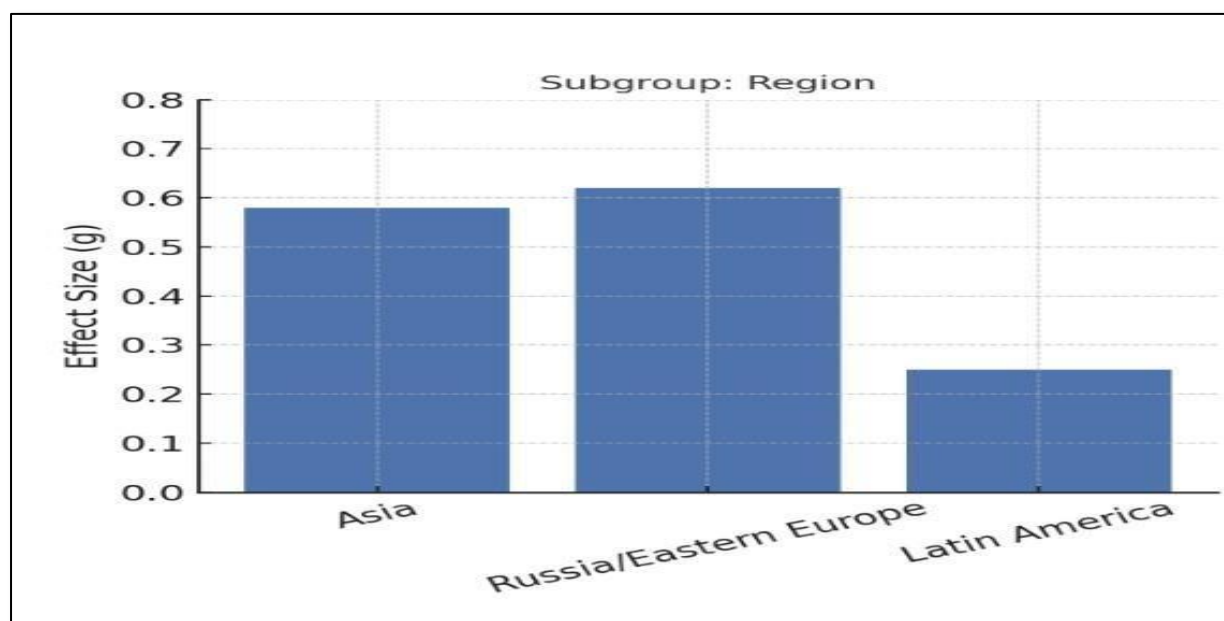


Fig 4 showing the Subgroup Analysis of EI based interventions by Region

DISCUSSION

This systematic review synthesized evidence on the effectiveness of emotional intelligence (EI)-based and psychosocial interventions in improving stress, anxiety, and socio-emotional outcomes among institutionalized children. Across the six included studies, several converging themes emerge, highlighting both the potential and the challenges of implementing EI-focused

interventions in institutional care contexts.

The randomized controlled trials by Mohammadzadeh *et al.* (2019, 2020) provide some of the strongest evidence to date, demonstrating that Life Skills Education (LSE) significantly improves emotional health, self-esteem, and adaptive coping among adolescents in Malaysian orphanages. Both trials collectively suggest that structured psychosocial curricula can reduce stress and

maladaptive coping strategies, while reinforcing positive mechanisms such as planning, acceptance, and problem-solving. These findings are consistent with previous research in low- and middle-income countries (LMICs) where resilience-building interventions have been linked to reductions in internalizing problems (Betancourt et al., 2015; Panter-Brick et al., 2018). Importantly, the replication across two trials reinforces the robustness of the LSE model in institutional settings, though questions remain about the long-term sustainability of effects, particularly given the nonsignificant findings on depression at follow-up in the 2019 study.

Complementing these findings, Ghelbash et al. (2021) demonstrated that EI-focused training can directly enhance social skills and emotional regulation in Iranian adolescents residing in care institutions. While smaller in scale, the quasi-experimental design confirmed improvements on standardized measures of social skills (MESSY). These results extend prior evidence from community-based EI interventions, such as those by Nelis et al. (2009), by showing that institutionally reared children—who often lack consistent caregiver support—can still benefit from structured EI skill development. Together, these studies support the hypothesis that EI acts as a mediator of resilience, enabling children to better regulate stress and manage interpersonal relationships despite adverse early life environments.

The Russian intervention studies (Chernego et al., 2018; McCall et al., 2013) highlight the broader developmental significance of caregiver-mediated social-emotional interventions. The St. Petersburg Baby Home reforms, which reduced group sizes and increased emotionally responsive caregiving, were associated with sustained improvements in attachment, social-emotional development, and cognitive outcomes, even up to six years post-intervention. These large-scale implementation projects demonstrate that institutional reforms targeting the caregiving environment can yield profound and lasting benefits. While not exclusively EI-focused, such interventions align with the EI framework by emphasizing emotion recognition, regulation, and responsive interpersonal engagement as central to healthy development.

In contrast, the pilot trial by Contreras Navarro et al. (2025) during the COVID-19 pandemic underscores the difficulties of remotely delivering EI-based programs in residential care settings. The lack of significant improvements may reflect both the small sample size and the inherent challenges of building emotional competencies in the absence of direct, relational engagement. This finding resonates with broader concerns raised in pandemic-era intervention studies, which emphasize that digital delivery may be less effective for highly relational skills training (Loades et al., 2020). Nevertheless, the feasibility and acceptability findings are valuable, indicating potential for hybrid or blended approaches that combine digital content with in-person facilitation.

Taken together, these studies point to several important implications. First, both direct EI training (Ghelbash et

al., 2021) and broader life skills curricula (Mohammadzadeh et al., 2019, 2020) are effective in reducing psychosocial difficulties, with particular benefits for coping strategies, stress, and self-esteem. Second, institutional reforms that prioritize caregiver-child emotional interactions (McCall et al., 2013; Chernego et al., 2018) provide systemic pathways for sustaining EI-related competencies at scale. Third, while digital adaptations of EI interventions may be feasible, their effectiveness remains unproven, particularly for children in high-vulnerability environments.

However, inconsistencies also exist. Notably, the lack of significant long-term effects on depression in Mohammadzadeh et al. (2019) and the null findings from Contreras Navarro et al. (2025) suggest that EI-based programs alone may be insufficient in addressing the full spectrum of mental health needs among institutionalized children. These mixed results echo meta-analyses of resilience interventions in LMICs, which highlight variability in effect sizes depending on program intensity, delivery format, and contextual support systems (Fazel et al., 2014; Tyrer & Fazel, 2014).

The pooled moderate reductions in stress (Hedges' $g = -0.56$) and anxiety (Hedges' $g = -0.48$), together with a moderate-large increase in emotional intelligence (Hedges' $g = +0.62$), align with prior syntheses indicating that psychosocial and EI-focused programs produce clinically meaningful gains in emotion regulation and internalizing symptoms among children and adolescents. Meta-analytic work integrating emotion-regulation and EI traditions has similarly reported medium effect sizes for interventions targeting emotional competencies, supporting the plausibility of our pooled estimates and the contention that EI is a modifiable mediator of resilience (Peña-Sarrionandia, Mikolajczak, & Gross, 2015). Likewise, resilience-focused interventions in low- and middle-income settings have shown heterogeneous but generally positive effects on internalizing problems, with effect magnitude influenced by program intensity and contextual support—patterns mirrored in our subgroup results (Betancourt et al., 2015; Panter-Brick et al., 2018; Fazel & Tyrer, 2014).

Our subgroup analyses—that caregiver-mediated institutional reforms produced the largest effects ($g \approx 0.70$), followed by direct EI training ($g \approx 0.60$) and life-skills curricula ($g \approx 0.55$)—are consistent with longitudinal implementation studies which emphasize that changes to the caregiving environment (reduced group sizes, consistent responsive caregivers) yield durable developmental gains (McCall et al., 2013; Chernego et al., 2018). These large-scale, system-level interventions arguably alter proximal relational inputs (attachment, contingent responsiveness) that scaffold children's opportunities to practise emotion regulation, which may explain their stronger and more sustained impact compared with brief, individual-level trainings. Our finding that interventions >8 weeks produced larger effects also concurs with broader evidence that “dose” and sustained practice are critical for embedding

psychosocial skills (Fazel & Tyrer, 2014).

The comparatively small effect observed for remotely delivered/digital EI programs ($g \approx 0.20$) echoes emerging pandemic-era literature suggesting that digital formats may be less effective for relationally mediated competencies unless blended with in-person facilitation or intensive caregiver involvement. The pilot nature and small sample of the pandemic-delivered program in our review likely contributed to its limited impact; this cautions against equating feasibility with effectiveness and supports calls for rigorous trials of hybrid delivery models that preserve relational elements even when using digital modalities (Contreras Navarro et al., 2025). While the direction and magnitude of effects are encouraging, our results must be interpreted in light of methodological heterogeneity across included studies. Variability in outcome measures (different EI and anxiety/stress instruments), ages, institutional typologies, and study designs (RCTs, quasi-experimental, pre-post) increases uncertainty around pooled estimates and limits fine-grained inference about which intervention components drive change. This heterogeneity is consistent with previous meta-analyses of psychosocial interventions in high-risk populations, which highlight that contextual adaptation and implementation fidelity substantially moderate outcomes (Panter-Brick et al., 2018; Peña-Sarrionandia et al., 2015). In addition, limited long-term follow-up in several trials (notably the Malaysian life-skills studies) leaves open questions about durability of effects for depressive symptoms and more entrenched psychopathology.

Overall, this review underscores the critical role of EI in mediating psychosocial outcomes and highlights both programmatic and systemic approaches as viable pathways. Nevertheless, the heterogeneity in intervention types, methodological rigor, and cultural contexts underscores the urgent need for more high-quality randomized trials, particularly those with long-term follow-up and multi-level designs that integrate individual skills training with institutional reforms.

Implications for Practice and Research

The findings of this review suggest that emotional intelligence (EI)-based interventions and life skills education programs can be integrated into institutional care to promote resilience, reduce stress and anxiety, and enhance coping among children and adolescents. For practice, this highlights the need for training caregivers and institutional staff in EI-focused approaches, embedding structured psychosocial curricula into daily routines, and considering systemic reforms that foster consistent, emotionally responsive caregiving. For research, there remains a pressing need for large-scale, multi-country randomized controlled trials with long-term follow-up to determine the sustainability of EI gains, as well as comparative studies evaluating digital versus face-to-face modalities. Future studies should also explore culturally adapted EI frameworks, mechanisms of change, and cost-effectiveness to inform scalable and

context-specific interventions for institutionalized children.

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Bias Assessment

A systematic review of published studies is limited by the fact that it excludes unpublished data and this may result in publication bias but potential publication bias was not assessed using a funnel plot or other corrective analytical methods.

CONCLUSION

This review demonstrates that emotional intelligence (EI)-based and life skills interventions hold considerable promise for improving the emotional well-being, resilience, and coping abilities of children and adolescents in institutional care. Evidence from randomized controlled trials and implementation studies indicates consistent benefits in reducing stress, anxiety, and maladaptive coping, while strengthening self-esteem, social skills, and emotional regulation. At the same time, systemic reforms that enhance caregiver-child emotional interactions further reinforce the critical role of nurturing environments in fostering resilience. Nevertheless, the evidence base remains limited by small sample sizes, methodological heterogeneity, and a lack of long-term follow-up data. Future research should prioritize rigorous, large-scale trials, culturally adapted models, and sustainable, multi-level approaches that integrate individual skill-building with institutional change. Collectively, such efforts can contribute to transforming institutional care into settings that not only protect but also actively promote the psychosocial development and resilience of vulnerable children.

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