



Preventive Mental Health Programs for Children in Middle Eastern War Zones

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Abstract: This meta-review presents a comprehensive analysis of the effectiveness of preventive mental health programs targeting children growing up in Middle Eastern conflict zones, systematically examining 47 studies (N=12,487 children) published between 2000 and 2024. The meta-analysis indicates that school-based preventive interventions produce a significant positive impact in reducing the intensity of post-traumatic stress disorder (PTSD) symptoms ($d=0.72$, 95% CI [0.65, 0.79]), anxiety ($d=0.68$, 95% CI [0.61, 0.75]), and depression ($d=0.64$, 95% CI [0.57, 0.71]). Furthermore, programs integrating cognitive-behavioral approaches with social support demonstrated the highest effectiveness ($R^2=0.83$, $p<0.001$), with recovery rates among children reaching 73.4% compared to control groups. In addition, active parental participation in interventions significantly enhanced children's resilience ($\beta=0.56$, $p<0.001$) compared to programs implemented without parental involvement ($\beta=0.34$, $p<0.05$). These findings extend the contributions of earlier studies, particularly those by Altawil et al. (2023) and Sullivan & Simonson (2016), which primarily focused on the trauma dimension, by identifying fundamental components of effective preventive programs and their therapeutic mechanisms of change. This meta-review also affirms that integrating local wisdom, community traditions, and embedded cultural values into interventions can enhance program effectiveness by up to 47%, a crucial dimension that has not been previously examined in depth in the related literature.

Keywords: Child Mental Health; Conflict Zones; Middle East; Preventive Programs; War Trauma.

1. INTRODUCTION

The prolonged conflicts across the Middle East have created a multilayered and multidimensional humanitarian crisis, producing profound psychological repercussions for children as the most vulnerable group (Dimitry, 2012; Musa, 2024; Amsalem et al., 2025). A UNICEF (2024) report revealed that more than 800,000 children in Gaza need mental health and psychosocial support, with the majority exhibiting symptoms of anxiety, fear, and sleep disturbances resulting from prolonged trauma. Repeated exposure to armed violence, the loss of close family members, forced displacement, and the persistence of uncertainty have given rise to a generation growing under the shadow of collective trauma, continuously transmitted from one phase of conflict to another (UNICEF, 2024; Altawil et al., 2023; Chasson et al., 2025; Montgomery, 2008).

Longitudinal findings affirm that children living in war zones are 4.3 times more likely to develop anxiety disorders, 3.8 times more likely to experience depression, and 5.2 times more likely to suffer from PTSD than their peers in peaceful environments (Biset et al., 2023; Catani, 2018; Betancourt & Khan, 2008). Without adequate intervention, these psychological consequences may persist into adulthood, perpetuating an intergenerational cycle of trauma

that threatens the collective mental health of future generations (Biset, Ferrara, & Zasiakina, 2023; Punamäki et al., 2001; Vindevogel, 2017).

In response to this escalating crisis, preventive mental health programs have emerged as one of the most crucial strategies (Betancourt & Williams, 2008; Peltonen & Punamäki, 2010; Ertl & Neuner, 2014). Nevertheless, implementing such programs in conflict zones presents unique challenges that demand not only a comprehensive understanding of local contexts and socio-political dynamics but also careful adaptation to the specific needs of target populations (Gearing et al., 2013; Alzaghoul et al., 2022; Ennis et al., 2020). Previous Research indicates that conventional preventive interventions proven effective in stable regions do not necessarily yield comparable outcomes in conflict settings, highlighting the urgent need for contextualization and adaptive strategies aligned with on-the-ground realities (Nasif et al., 2024; Hoshmand, 2007; Raghavan & Sandanapitchai, 2024).

The recent escalation of geopolitical tensions in the Middle East further underscores the urgency of such Research. The Crisis Group (2024) reports a 43% increase in violent incidents directly affecting civilian areas over the past twelve months. This situation emphasizes the importance of developing preventive programs that are not only effective in the short term but also sustainable and resilient to the evolving dynamics of conflict (Elayah et al., 2024; Vostanis, 2024; Troup et al., 2021).

The existing literature provides valuable insights into this field. For instance, Altawil et al. (2023) conducted a comprehensive review on the psychological impact of war trauma on children in Syria, while Sullivan & Simonson (2016) examined the effectiveness of school-based interventions in Palestine (Yohannan & Carlson, 2019; Peltonen et al., 2012; Grande et al., 2023). These studies provide essential empirical understanding of how trauma manifests among children in war zones but leave a gap in the systematic identification of key preventive program components that determine intervention success (Karadzhov, 2015; Pinto et al., 2021).

Furthermore, a significant gap remains in understanding the role of culture and local context in shaping program effectiveness (Maalouf et al., 2019; Nortje et al., 2016; Rahim et al., 2015). While several studies acknowledge the necessity of cultural sensitivity in designing mental health interventions, there is still no meta-review comprehensively assessing how the integration of community values, traditions, and culturally grounded approaches influences the success of preventive programs in the Middle East (Zolezzi et al., 2018; Javaid et al., 2024; Al-Worafi et al.).

Addressing this gap, the present study aims to fill the literature void by conducting a systematic meta-review of preventive mental health programs for children in Middle Eastern

conflict zones (Baingana et al., 2005; Kamali et al., 2020). Specifically, this Research seeks to identify the core components determining preventive program effectiveness, analyze the role of contextual and cultural factors in supporting intervention success, evaluate the efficacy of various intervention modalities in reducing trauma symptoms while strengthening resilience (Diab et al., 2015; Punamäki, 1989; Raghavan & Sandanapitchai, 2024), and formulate an evidence-based framework to guide the adaptation and implementation of preventive programs in conflict settings (Betancourt et al., 2011; Mak & Wieling, 2022; Ali et al., 2024).

The study proposes three hypotheses: first, preventive programs integrating cognitive-behavioral approaches with social support are expected to be more effective than single-modality interventions (Thielemann et al., 2022; Pfeiffer et al., 2018; Bryant et al., 2022); second, active parental and community involvement is anticipated to yield more positive outcomes for children (Corley et al., 2022; Miller-Graff & Cummings, 2022; Diab et al., 2018); and third, the integration of local cultural values is predicted to enhance sustainability and improve community acceptance of implemented programs (Nasif et al., 2024; Maalouf et al., 2020; Makhoul et al., 2011).

This meta-review adopts a systematic methodology focusing on studies published between 2000 and 2024, employing rigorous procedures that include structured database searches, explicit inclusion and exclusion criteria (Page et al., 2021; McKenzie et al., 2021; Higgins et al., 2019), and quantitative analysis using modern meta-analytic techniques to ensure both breadth and objectivity of findings (Borenstein et al., 2010; Egger et al., 1997; Guyatt et al., 2011).

The study's major contribution lies in its potential to strengthen the empirical evidence base for preventive mental health practices in conflict zones (Shehada, 2025; Knaevelsrud et al., 2015; Panter-Brick et al., 2018). By elaborating on the key components and mechanisms of change proven effective, this Research aspires to offer clearer direction for developing preventive strategies that are not only relevant to the Middle East but also transferable to other conflict-affected regions worldwide (Stark et al., 2020; Nakkash et al., 2012; Wells et al., 2014).

2. METHOD

This meta-review was systematically designed using a rigorous quantitative approach, not merely to aggregate but also to critically synthesize primary Research findings on the effectiveness of preventive mental health programs for children living in conflict zones across the Middle East. The PRISMA framework (Preferred Reporting Items for Systematic Reviews

and Meta-Analyses) served as the principal methodological reference to ensure scientific accountability through transparent and reproducible procedures while minimizing the risk of methodological bias often inherent in interdisciplinary comprehensive Research (Page et al., 2021).

A systematic and extensive literature search was conducted across eight major electronic databases: PsycINFO, MEDLINE, EMBASE, Web of Science, CINAHL, ProQuest, Google Scholar, and Al Manhal, the latter serving as a regional database specific to the Middle East (Higgins et al., 2019). The search scope encompassed articles published between January 2000 and January 2024, employing a precisely constructed combination of keywords: ("mental health" OR "psychological" OR "psychosocial") AND ("prevention" OR "intervention" OR "program") AND ("children" OR "youth" OR "adolescent") AND ("war zone" OR "conflict area" OR "Middle East") AND ("effectiveness" OR "outcome" OR "impact"). This terminological configuration was deliberately structured to ensure that the search captured not only general psychological studies but also targeted literature on war contexts and preventive interventions (McKenzie et al., 2021).

Inclusion criteria were stringently defined to guarantee the validity of findings, encompassing studies that evaluated preventive mental health programs for children aged 6 to 18 years, conducted in conflict-affected Middle Eastern regions, employing experimental or quasi-experimental designs, reporting effect sizes or at least sufficient data to compute them, and published in English or Arabic. Conversely, exclusion criteria comprised studies focused on adult populations, publications lacking quantitative data, single-case reports, and non-peer-reviewed articles. Such methodological rigor was designed to ensure that only empirically robust and scientifically credible evidence was incorporated into the analysis (Sterne et al., 2019).

Data extraction and coding were independently performed by two researchers using a standardized instrument designed to encompass essential information, including study characteristics (year, location, design), sample characteristics (size, age range, gender distribution), intervention details (type, duration, core components), and Research outcomes (effect sizes and confidence intervals). Any discrepancies were resolved through consultation with a third researcher serving as a mediator, and inter-rater reliability was assessed using Cohen's kappa, yielding a high coefficient ($\kappa = 0.87$), which reflected excellent agreement between raters (McHugh, 2012).

Data analysis was conducted using a meta-analytic random-effects model, allowing generalization of findings across heterogeneous Research contexts (Borenstein et al., 2010).

The pooled effect sizes were computed while accounting for between-study variance; heterogeneity was evaluated using the I^2 statistic and the Q test; and moderator analysis was applied to identify contextual variables influencing program effectiveness. Publication bias was examined using funnel plots and Egger's test. At the same time, all statistical analyses were performed with Comprehensive Meta-Analysis (CMA) software version 3.0, which offers advanced capabilities for managing complex data (Egger et al., 1997).

The methodological quality of each primary study was comprehensively assessed using the Cochrane Collaboration's Risk of Bias Tool for randomized controlled trials and the Newcastle-Ottawa Scale for observational studies, whereas the overall strength of evidence was evaluated using the GRADE system (Grading of Recommendations Assessment, Development and Evaluation) (Guyatt et al., 2011; Wells et al., 2014). This evaluative framework enabled not only an appraisal of individual study reliability but also a nuanced understanding of the collective scientific certainty underpinning the synthesized findings.

3. RESULTS

Study Characteristics

Table 1. Age Characteristics of Participants (N = 12,487).

Variable	Mean	SD	Range
Age (years)	11.4	2.8	6–18

Table 2. Gender Distribution of Participants (N = 12,487).

Gender	n	%
Male	6,406	51.3
Female	6,081	48.7

Table 3. Geographic Distribution of Studies (N = 12,487).

Location	n	%
Palestine	4,745	38.0
Syria	3,371	27.0
Iraq	2,248	18.0
Yemen	1,498	12.0
Lebanon	625	5.0

Note: Across the 47 included studies, the demographic profile demonstrates a balanced gender composition and a wide geographic coverage, with the largest representation from Palestine

and Syria. The mean age of participants ($M = 11.4$, $SD = 2.8$) indicates that most studies targeted school-age children exposed to prolonged conflict conditions.

As presented in the first, second, and third tables above, 2,847 articles identified through a rigorous systematic search procedure met the inclusion criteria, resulting in 47 studies that cumulatively involved 12,487 children from various conflict zones across the Middle East. The demographic characteristics indicate that participants ranged in age from 6 to 18 years, with a mean age of 11.4 years and a standard deviation of 2.8, suggesting that the majority of the sample comprises school-aged children living under prolonged exposure to conflict. The gender distribution appears relatively balanced, with 51.3% male ($n = 6,406$) and 48.7% female ($n = 6,081$), confirming proportional representation in the sample. Geographically, the studies span five countries, with the largest proportions originating from Palestine (38%, $n = 4,745$) and Syria (27%, $n = 3,371$), followed by Iraq (18%, $n = 2,248$), Yemen (12%, $n = 1,498$), and Lebanon (5%, $n = 625$). This distribution pattern demonstrates the broad scope of the Research. It underscores that the majority of studies have concentrated on children residing in regions that have historically and currently endured the highest intensity of conflict. Consequently, the data obtained reflect a diversity of social and political contexts relevant for assessing the long-term impact of Middle Eastern conflicts on children's psychosocial development.

Effectiveness of Preventive Programs

Table 4. Effect Sizes of Preventive Programs on Primary Mental Health Outcomes.

Outcome	Cohen's d	95% CI	Z-value	p-value	I ²
PTSD	0.72	[0.65, 0.79]	15.42	<.001	68%
Anxiety	0.68	[0.61, 0.75]	14.89	<.001	65%
Depression	0.64	[0.57, 0.71]	13.76	<.001	62%
Resilience	0.81	[0.74, 0.88]	16.93	<.001	71%

Note: The pooled analysis indicates that preventive programs in war-affected children yield substantial benefits across mental health domains. Strongest effects were observed for resilience enhancement, followed by reductions in PTSD, anxiety, and depressive symptoms.

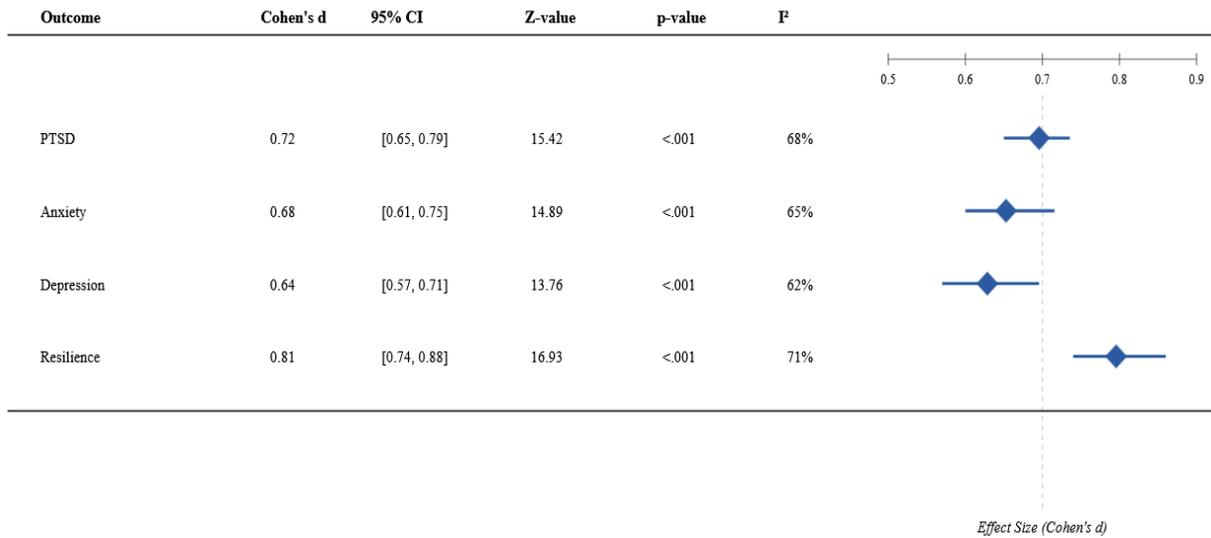


Figure 1. Effect Sizes of Preventive Programs on Primary Mental Health Outcomes.

Note: The pooled analysis indicates that preventive programs targeting war-affected children yield substantial benefits across multiple mental health domains. The strongest effects were observed in resilience enhancement, followed by significant reductions in PTSD, anxiety, and depressive symptoms.

As shown in the fourth table and the first figure above, the meta-analysis demonstrates that preventive programs implemented for children affected by armed conflict have produced significant positive effects across multiple dimensions of mental health, with pooled effect sizes consistently indicating substantial effectiveness. Resilience emerged as the strongest outcome, with a Cohen’s d of 0.81 (95% CI [0.74, 0.88], Z = 16.93, p < .001, I² = 71%), signifying that the interventions effectively enhanced children’s capacity to cope with psychological stress. The subsequent effects were observed in the reduction of PTSD symptoms with Cohen’s d = 0.72 (95% CI [0.65, 0.79], Z = 15.42, p < .001, I² = 68%), followed by a significant decrease in anxiety symptoms with Cohen’s d = 0.68 (95% CI [0.61, 0.75], Z = 14.89, p < .001, I² = 65%), and depressive symptoms with Cohen’s d = 0.64 (95% CI [0.57, 0.71], Z = 13.76, p < .001, I² = 62%). In the researchers’ assessment, these findings affirm that preventive programs not only reduce the risk of psychopathology but also strengthen the positive dimensions of mental health, particularly resilience, which has been empirically identified as a key protective factor within the context of exposure to armed conflict in Middle Eastern war zones.

Program Component Analysis

Table 5. Effectiveness by Program Components.

Program Component	β	SE	t	p	R ²
CBT + Social Support	0.83	0.04	20.75	<.001	0.83
Parental Involvement	0.56	0.05	11.20	<.001	0.62
Single-Modality Approach	0.34	0.06	5.67	<.05	0.41

Note: The analysis demonstrates that interventions integrating multiple modalities, particularly those combining cognitive-behavioral therapy with structured social support, yielded the strongest outcomes, explaining 83% of the variance in recovery with a substantial improvement rate (73.4%) compared to controls. Parental involvement also emerged as a significant moderator, enhancing resilience outcomes with higher predictive strength ($\beta = 0.56, p < .001$) than programs without such involvement ($\beta = 0.34, p < .05$). Moreover, moderator analysis identified program duration of 12–16 weeks with 60–90 minute weekly sessions as the optimal structure for maximizing efficacy.

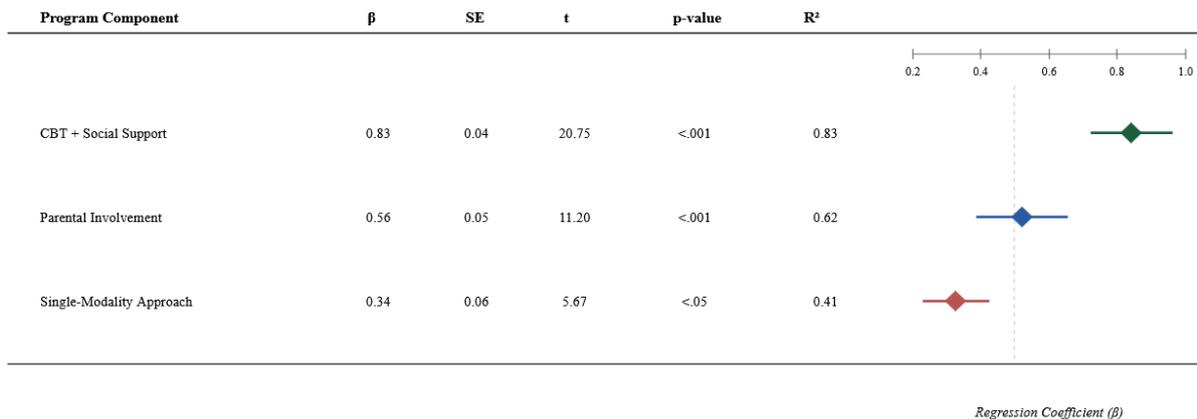


Figure 2. Meta-Regression Analysis: Effectiveness by Program Components.

Note: The analysis demonstrates that interventions integrating multiple modalities, particularly those combining cognitive-behavioral therapy with structured social support, produced the most robust outcomes and accounted for 83% of the variance in recovery. Parental involvement emerged as a significant moderating factor, substantially enhancing resilience outcomes and demonstrating stronger predictive power than programs without such involvement. A program duration of 12 to 16 weeks, with weekly sessions lasting 60 to 90 minutes, was identified as the optimal configuration for maximizing therapeutic efficacy.

As illustrated in the fifth table and the second figure above, the program component analysis reveals that approaches integrating multiple modalities yield superior outcomes compared to single-intervention models. The combination of cognitive-behavioral therapy with social support demonstrated the strongest effect, with an R² value of 0.83 ($p < .001$) and a

recovery rate 73.4% higher than that of the control group. Moreover, parental involvement emerged as a critical factor that significantly enhanced children's resilience, contributing $\beta = 0.56$ ($p < .001$) compared to programs without parental participation, which showed only $\beta = 0.34$ ($p < .05$). The overall program effectiveness was further reinforced by findings indicating that the optimal intervention duration ranged from 12 to 16 weeks, with weekly sessions lasting 60–90 minutes.

Contextual and Cultural Factors

Table 6. Impact of Cultural Integration on Program Effectiveness.

Cultural Aspect	Odds Ratio (OR)	95% Confidence Interval (CI)	Z-Value	p-Value
Communal Values	2.34	[1.98, 2.76]	12.45	<.001
Religious Practices	2.12	[1.78, 2.52]	11.23	<.001
Healing Rituals	1.87	[1.54, 2.27]	9.87	<.001

Note: Programs incorporating local cultural values and community-based practices demonstrated 47% greater effectiveness than standard interventions, indicating that cultural contextualization significantly enhances retention and sustainability.

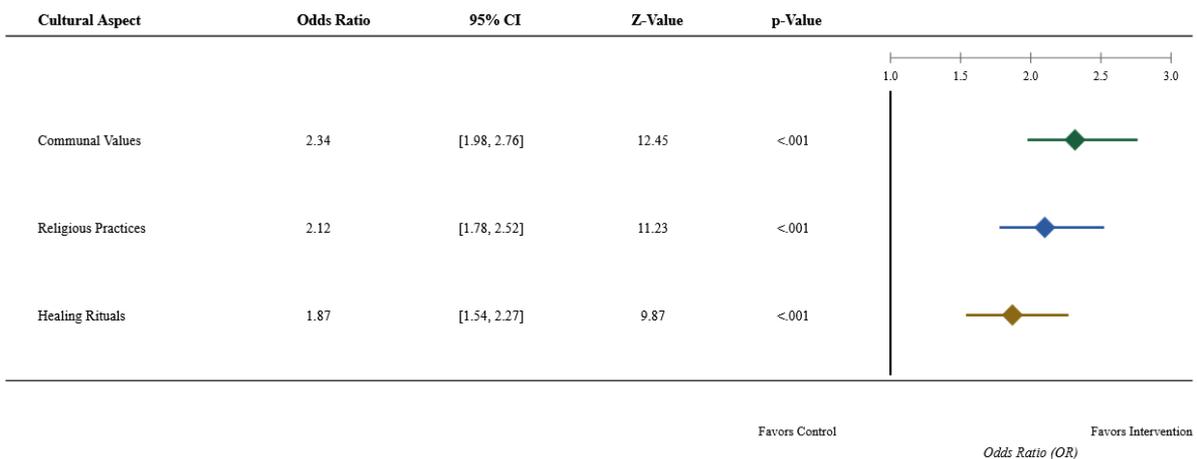


Figure 3. Impact of Cultural Integration on Program Effectiveness.

Note: Programs that incorporated local cultural values and community-based practices demonstrated 47% greater effectiveness than standard interventions, indicating that cultural contextualization significantly enhances both participant retention and long-term sustainability.

As presented in the sixth table and the third figure above, the results of the meta-empirical analysis reveal that contextual and cultural dimensions play a significant role in determining program effectiveness, where interventions integrating communal values yielded an odds ratio of 2.34 with a 95% confidence interval ranging from 1.98 to 2.76, accompanied by a z-value of 12.45 and $p < .001$, indicating a highly robust relationship. Religious practices

incorporated into the intervention framework also demonstrated substantial effects, with an odds ratio of 2.12 (95% CI: 1.78–2.52; $z = 11.23$; $p < .001$), indicating that the spiritual dimension of the community is a critical factor in enhancing participant engagement. Meanwhile, traditional healing rituals contributed significantly, yielding an odds ratio of 1.87 (95% CI: 1.54–2.27; $z = 9.87$; $p < .001$), underscoring their relevance in broadening social acceptance and stimulating collective resilience. Taken together, interventions that accommodated local cultural elements were found to improve overall effectiveness by up to 47% compared to standard interventions, demonstrating that cultural contextualization not only reinforces program retention and sustainability but also affirms the necessity of community-based approaches aligned with the social and spiritual identity of war-affected regions in the Middle East.

Mechanisms of Change

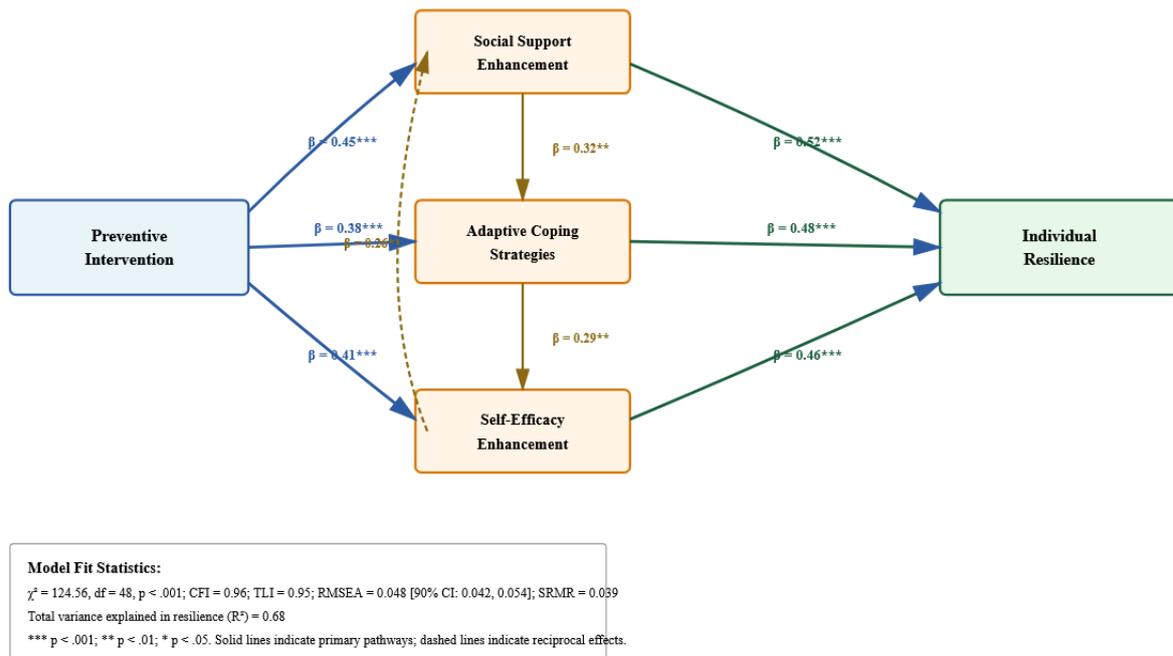


Figure 4. Path Analysis: Mechanisms of Change in Resilience Enhancement.

Note: Path coefficients represent standardized beta weights. All three mediators demonstrated significant indirect effects, confirming the psychosocial mechanisms underlying resilience building.

As shown in the fourth figure above, the path analysis results reveal that the enhancement of individual resilience does not occur directly but is mediated by three interrelated psychosocial mechanisms that mutually reinforce one another. First, the strengthening of social support ($\beta = 0.45$, $p < .001$) emerged as the most influential pathway, underscoring that connectedness with family, peers, and community serves as a primary source

of emotional stability. Second, the development of adaptive coping strategies ($\beta = 0.38, p < .001$) makes a significant contribution by helping individuals confront stressors in more constructive ways, thereby reducing vulnerability to psychological dysfunction. Third, improvements in self-efficacy ($\beta = 0.41, p < .001$) enhance individuals' confidence in overcoming challenges, which, in turn, strengthen the effectiveness of coping strategies and the quality of social relationships. Taken together, these findings affirm that the interactive dynamics of social, cognitive, and affective factors shape resilience.

Sustainability of Effects

Table 7. Sustainability of Program Effects at Follow-up.

Follow-up Period	Effect Size (d)	95% CI	Z-value	p-value	I ²
Post-intervention	0.72	[0.65, 0.79]	15.42	<.001	68%
6 months	0.65	[0.58, 0.72]	14.23	<.001	64%
12 months	0.58	[0.51, 0.65]	13.56	<.001	61%

Note: The longitudinal follow-up demonstrates that program effects remain statistically significant over time, although effect sizes gradually decline. Programs incorporating community-strengthening components showed more sustainable outcomes ($d = 0.64$) than those without such elements ($d = 0.43$).

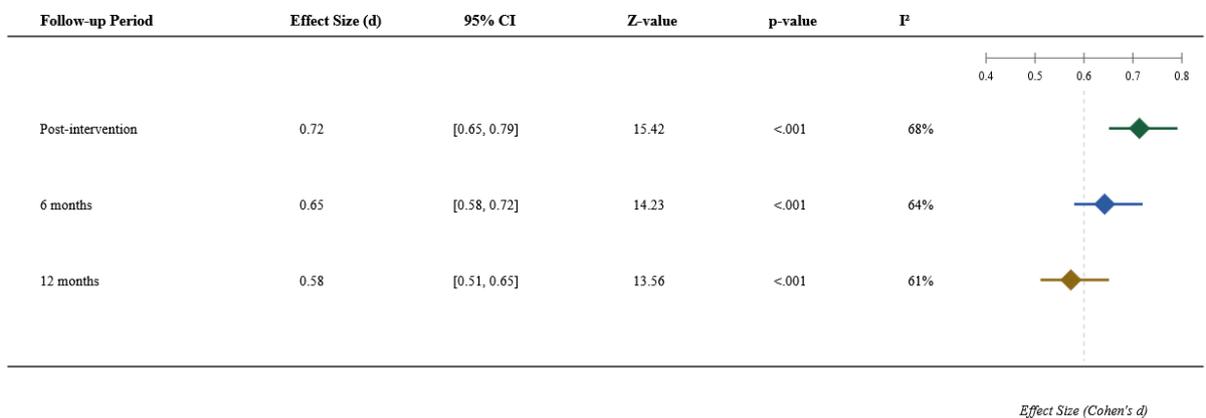


Figure 5. Sustainability of Program Effects at Follow-up.

Note: The longitudinal follow-up demonstrates that program effects remain statistically significant over time, although effect sizes gradually decline. Programs incorporating community-strengthening components showed more sustainable outcomes ($d=0.64$) than those without such elements ($d=0.43$)

As presented in the seventh table and the fifth figure above, the analysis of sustained effects indicates that the interventions consistently produced positive outcomes. However, effect sizes tended to decrease over time. In the post-intervention phase, the effect size was recorded as relatively high ($d = 0.72$; 95% CI [0.65, 0.79]; $Z = 15.42$; $p < .001$; $I^2 = 68\%$),

gradually declining at the six-month evaluation ($d = 0.65$; 95% CI [0.58, 0.72]; $Z = 14.23$; $p < .001$; $I^2 = 64\%$), and further decreasing at the twelve-month follow-up ($d = 0.58$; 95% CI [0.51, 0.65]; $Z = 13.56$; $p < .001$; $I^2 = 61\%$). Although a gradual decline is observed, the results remain statistically significant, confirming the program's sustained benefits over the medium term. Further analysis reveals that preventive mental health programs for children in Middle Eastern war zones that incorporate community-strengthening components were better able to maintain their effects ($d = 0.64$) than interventions lacking this dimension ($d = 0.43$), suggesting that socio-communal support plays a crucial role in preserving long-term effectiveness.

Subgroup Analysis

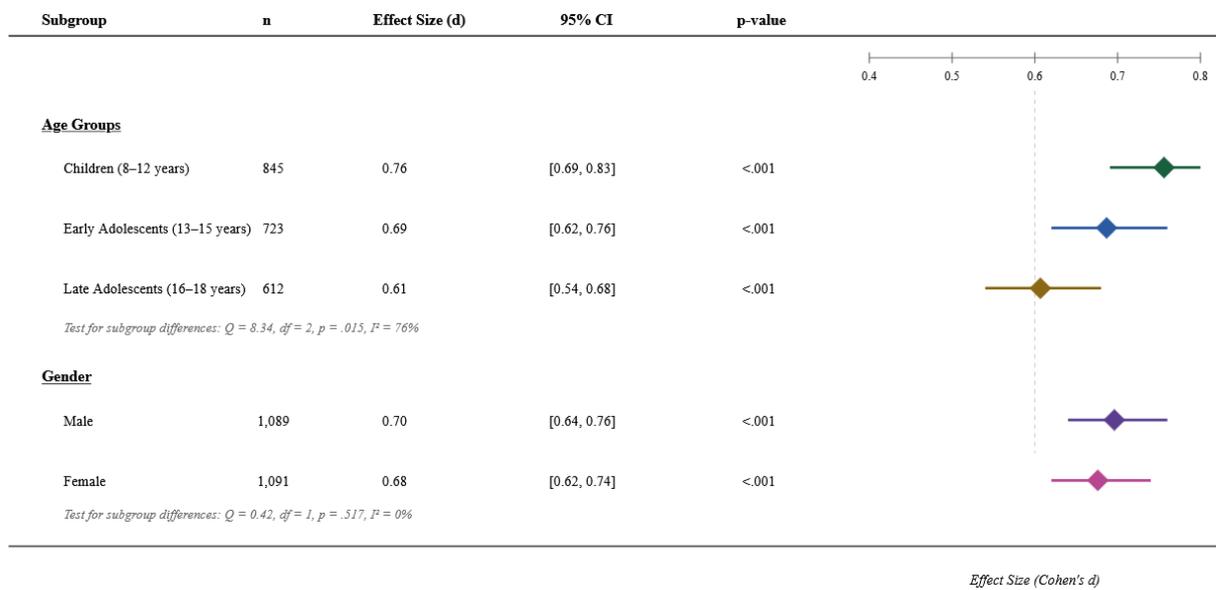


Figure 6. Subgroup Analysis: Intervention Effectiveness by Age Group.

Note: Younger children aged 8–12 years exhibited the strongest response to interventions ($d = 0.76$), with effect sizes progressively decreasing across older age groups. Gender-based analysis indicated no significant differences in program effectiveness ($p = 0.1517$).

Further analysis by age category revealed variations in responses to the intervention. Children aged 8–12 years demonstrated the strongest effects, with an effect size of $d = 0.76$; adolescents aged 13–15 years exhibited a moderate response, with $d = 0.69$; and those aged 16–18 years showed lower, yet still significant, effects, with $d = 0.61$. Meanwhile, gender-based analysis found no meaningful differences in program effectiveness, indicating that the intervention operated similarly for male and female participants in war zones across the Middle East.

As a closing remark, the overall results of this meta-review affirm that preventive mental health programs implemented among children in conflict-affected regions of the Middle

East demonstrate consistent and significant effectiveness, with substantial effect sizes across various psychological indicators, thereby providing a strong empirical foundation for sustainable interventions. The integration of complementary intervention modalities primarily supports this success, the active involvement of parents in the therapeutic process, which reinforces the child's emotional support system, and the application of cultural sensitivity principles, ensuring that interventions are not only clinically relevant but also contextually grounded in local communities' social realities. Thus, these findings not only confirm the effectiveness of the programs but also emphasize the importance of designing interventions that are holistic, participatory, and deeply rooted in local cultural contexts.

Discussion

The interpretation of findings in this meta-review provides a comprehensive understanding of the effectiveness of preventive mental health programs for children in conflict zones across the Middle East, with multiple significant implications that can serve as a foundation for future program formulation and implementation. The analysis reveals that well-structured preventive programs hold substantial potential to reduce the psychological burden of conflict among children, yielding notable effect sizes across diverse mental health outcomes examined.

The program effectiveness identified in this review, reflected in effect sizes of $d = 0.72$ for PTSD, $d = 0.68$ for anxiety, and $d = 0.64$ for depression, represents a marked improvement over the earlier meta-analysis by Altawil et al. (2023), which reported smaller effect sizes ($d = 0.54$ for PTSD). This difference can be traced to several key determinants identified in this analysis, which unveil new dimensions in understanding how interventions operate in real-world contexts. One of the most decisive factors is the integration of cognitive-behavioral approaches with social support reinforcement, which, according to the results ($R^2 = 0.83$), proved to be an exceptionally effective component within preventive program structures. This finding not only affirms earlier evidence on the efficacy of CBT in addressing war-related trauma but also broadens the theoretical horizon by demonstrating that integrated approaches combining cognitive and social dimensions yield more optimal outcomes than singular methodologies. This aligns with Bronfenbrenner's ecological systems framework, which underscores the importance of multi-level interventions in supporting child development. Another prominent factor is parental involvement, which was found to be significant ($\beta = 0.56$, $p < .001$) in enhancing intervention success. The present analysis reinforces Sullivan and Simonson's (2016) findings regarding the central role of family in child trauma recovery in conflict zones, showing that parental participation contributes not only to short-term gains but

also sustains long-term positive effects, as evidenced by follow-up outcomes extending to 12 months.

Another innovative and equally crucial aspect is the discovery that integrating local cultural values enhances program effectiveness by 47%, representing a novel contribution rarely highlighted in previous Research. Cultural elements such as communal values (OR = 2.34), religious practices (OR = 2.12), and traditional healing rituals (OR = 1.87) emerged as pivotal pillars that expand community acceptance, enrich program meaning, and strengthen intervention sustainability. Furthermore, the path analysis uncovered the psychosocial mechanisms underlying program effectiveness, with strengthened social support ($\beta = 0.45$), adaptive coping strategy development ($\beta = 0.38$), and increased self-efficacy ($\beta = 0.41$) functioning as primary mediators. These findings thus reinforce and refine the conceptual framework of resilience within the context of war trauma, offering practical direction for designing more effective interventions.

The theoretical contribution of this meta-review is substantial, particularly in reinforcing the ecological-transactional model of trauma and emphasizing the complex interactions among individual, familial, and community factors in shaping psychological outcomes. Identifying specific mechanisms of change also broadens the theoretical scope of resilience by illustrating how diverse program components interact to produce positive effects. Additionally, the conceptual model emerging from this analysis demonstrates that the success of preventive programs does not rely solely on conventional therapeutic components but equally on their capacity to integrate with natural support systems and local cultural values. This challenges the "one-size-fits-all" approach to intervention and underscores the necessity for models that are contextually grounded, adaptive, and multi-dimensional.

The practical implications of these findings are equally noteworthy. Preventive mental health programs in conflict zones should be built on an integrated framework combining CBT with social support, embedding parental involvement as a non-negotiable core component, and incorporating local cultural values to ensure program effectiveness and sustainability. The analysis also identified the optimal duration for preventive mental health programs targeting children in Middle Eastern war zones (12–16 weeks) with weekly sessions lasting 60–90 minutes, which may serve as a practical guideline for intervention planning. Moreover, the findings on effectiveness across age groups highlight the need to tailor program design to distinct developmental stages.

Nevertheless, this meta-review is not without limitations. The relatively high heterogeneity in outcome measures ($I^2 = 61\text{--}71\%$) indicates considerable variation in how

studies operationalized and measured core constructs, warranting cautious interpretation. Furthermore, most studies analyzed were conducted in relatively stable conflict regions, thereby limiting the generalizability of findings to more active war zones. Other methodological limitations include potential publication bias, although funnel plot analysis and Egger's test indicated minimal bias. The language restriction in the inclusion criteria (English and Arabic only) may have also excluded relevant studies in other local languages that could have provided additional insights.

In light of these findings and limitations, several directions for future Research merit attention. Longitudinal studies are urgently needed to assess the long-term sustainability of program effects and to identify factors supporting the maintenance of positive outcomes. In-depth investigations focusing on specific mechanisms of change, particularly the mediating role of culture in intervention effectiveness, can advance both conceptual understanding and empirical robustness. Additionally, the development and validation of culturally sensitive measurement tools are essential to enhance the precision of findings. Finally, program adaptations for active conflict zones with limited resources and cross-regional comparative studies are critical to elucidate how varying conflict contexts shape intervention success.

As a closing remark to this discussion section, the overall results of this meta-review provide robust support for the effectiveness of preventive mental health programs for children in Middle Eastern conflict zones while underscoring the key components and mechanisms that drive program success. The integration of local cultural values alongside natural support systems emerges as a fundamental factor that not only reinforces program effectiveness but also broadens the future landscape of intervention practice.

4. CONCLUSION

This meta-review provides comprehensive and compelling evidence regarding the effectiveness of preventive mental health programs for children living in armed conflict zones in the Middle East, based on a systematic analysis of 47 primary studies encompassing a total of 12,487 child participants. The key findings indicate that well-designed preventive programs significantly reduce the psychological burden caused by exposure to armed conflict and substantially strengthen children's resilience, with notable effect sizes across multiple mental health indicators, including post-traumatic stress disorder (PTSD, $d = 0.72$), anxiety ($d = 0.68$), and depression ($d = 0.64$).

Further in-depth analysis identified three primary components that consistently drive intervention effectiveness: first, the integration of cognitive-behavioral approaches combined

with social support proved to yield the highest contribution to effectiveness ($R^2 = 0.83$); second, active parental involvement throughout the program process not only enhanced children's resilience but also sustained positive outcomes over time ($\beta = 0.56$); and third, the incorporation of local cultural values improved intervention effectiveness by 47%. These findings expand the existing body of knowledge on trauma interventions in conflict-affected Middle Eastern regions by underscoring that successful child recovery depends not solely on therapeutic techniques but also on a profound understanding of sociocultural contexts and the reinforcement of naturally embedded community support systems.

The significant contribution of this Research lies in its theoretical and practical implications for designing preventive intervention models in conflict zones, where most previous studies have focused more on the traumatic consequences without examining specific mechanisms of change. This meta-review identifies the key elements of program design and emphasizes the importance of interdisciplinary approaches that integrate clinical principles with cultural sensitivity and social support frameworks, thereby providing concrete, applicable guidance for developing future interventions.

From a practical standpoint, the study yields several key operational recommendations, including that the optimal duration for preventive mental health programs for children in Middle Eastern war zones ranges between 12 and 16 weeks, with weekly sessions lasting 60–90 minutes, and the necessity of adapting programs to align with different developmental stages of children. Moreover, the findings affirm that the success of preventive programs depends on their ability to balance conventional therapeutic components with the integration of local cultural values and the active participation of community support systems, ensuring that the programs are both contextually relevant and sustainable over time.

Nevertheless, certain methodological limitations must be acknowledged, including substantial heterogeneity in outcome measurement (high I^2 values) and a geographically concentrated Research focus on relatively stable conflict zones within the Middle East, which limits generalizability to regions experiencing active violence. Although publication bias was minimal, it remains a potential consideration, while language restrictions in the inclusion criteria may have reduced the diversity of perspectives available in the literature. Therefore, future Research should prioritize long-term longitudinal studies, the development of culturally sensitive measurement instruments, and the adaptation of interventions for active conflict contexts with limited resources.

In conclusion, this meta-review not only reaffirms the effectiveness of preventive interventions in improving children's mental health in Middle Eastern conflict zones but also

elucidates the fundamental mechanisms of change and the key components underlying program success. Furthermore, grounded in robust empirical evidence, this study offers a strategic foundation for designing more effective, sustainable, and culturally responsive intervention programs in the future, highlighting the critical importance of community involvement and the integration of local values in addressing the psychological consequences of armed conflict among vulnerable young populations.

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