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Analysis of Early Intervention Systems for War-Related Trauma in the Middle East

(A Programmatic Synthesis)

Nurzahara Sihombing[1], M. Agung Rahmadi[2*], Naila Al Madina[3], Zulpiani Br Sipayung[4], Khaila Salsabila[5], Helsa Nasution[6], Luthfiah Mawar [7], Andine Mei Hanny[8]

[1] SD Negeri 107396 Paluh Merbau, Indonesia
[2,7] Sekolah Tinggi Ilmu Kesehatan Sehati Medan, Indonesia
[3-5,8] Fakultas Kesehatan Masyarakat, Universitas Islam Negeri Sumatera Utara, Indonesia
[6] Universitas Alwasliyah Medan, Indonesia
Email: nurzahara.sihombing47@admin.sd.belajar.id[1], therolland15@gmail.com[2], nailaalmadina30@gmail.com[3], piasipayung31@gmail.com[4], khailasalsabila7@gmail.com[5], helsanasution95@gmail.com[6], luthfiahmawar@students.usu.ac.id[7], andinemeihanny5@gmail.com[8]*
[*]*Corresponding Author: therolland15@gmail.com[2]*

Abstract: This study critically examines the effectiveness of early intervention programs in addressing war-related trauma in the Middle East by meta-synthesizing 47 interventions implemented between 2010 and 2024. The analysis demonstrates that cognitive-behavioral therapy (CBT)-based interventions achieved a 78.3 percent success rate ($p<.001$) in reducing post-traumatic stress disorder (PTSD) symptoms, with an effect size of $d=0.86$ indicating substantial therapeutic strength. Group-based interventions showed higher effectiveness (83.2 percent) than individual approaches (71.5 percent), and programs involving family support yielded better recovery outcomes (84.7 percent) than those without family involvement (69.3 percent). Regression analysis identified three primary predictors of successful intervention outcomes, namely intervention duration ($\beta=.42$, $p<.001$), therapist cultural competence ($\beta=.38$, $p<.001$), and the integration of social support systems ($\beta=.35$, $p<.001$). These findings not only expand on prior studies by Ennis et al. (2020) and Mawar et al. (2025), which were limited to evaluating CBT effectiveness, but also reinforce the significance of cultural dimensions and social support systems as critical determinants. In contrast to the meta-analysis by Nocon et al. (2017), which reported a 65% effectiveness rate for individual interventions, the present study reveals a significant superiority of group-based approaches in communal Middle Eastern societies. The novelty of this study lies in its comprehensive identification of culturally sensitive determinants of early intervention success and the formulation of an integrative model positioning family support as an essential component in protocols for war-related trauma care.

Keywords: Cognitive-Behavioral Therapy; Early Intervention; Middle East; PTSD; War Trauma

1. INTRODUCTION

The prolonged conflicts across the Middle East have produced a multidimensional humanitarian crisis with profound psychological consequences for exposed civilian populations (Majdalani, 2025; Tinsae et al., 2024). Recent reports from the World Health Organization (WHO) indicate that approximately 54 percent of individuals living in Middle Eastern conflict zones experience symptoms of psychological trauma, and among them, 32 percent meet diagnostic criteria for Post-Traumatic Stress Disorder (PTSD) (WHO Global Mental Health Report, 2023). From the researcher's perspective, this figure reflects a substantial increase from only 23 percent in 2015, demonstrating an urgent need for highly effective early intervention systems, both to prevent symptom deterioration and to strengthen psychological resilience within affected communities (Litz et al., 2002; de Jong et al., 2003; Peltonen & Punamäki, 2010).

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War-related trauma possesses distinctive characteristics that sharply differentiate it from trauma arising from disasters or individual events because it is rooted in prolonged, recurrent, collective experience (Punamäki et al., 2017; Oakley et al., 2021). For instance, a longitudinal study conducted by Jebril et al. (2023) in Gaza revealed that long-term exposure to armed conflict increases the risk of PTSD by 3.5 times, with severity demonstrating a positive correlation with exposure duration ($r = 0.67$, $p < 0.001$) (Jebril et al., 2023). These findings are reinforced by Bryant-Davis (2019), who reported that 78 percent of children in conflict zones experience recurring nightmares, while 65 percent display significant avoidance behaviors. Such conditions not only affect emotional development at the individual level but also create transgenerational impacts within the family system (Bryant-Davis, 2019; Jordans et al., 2009; Alzaghoul et al., 2022).

Within this context, early intervention serves as a critical mechanism due to its potential to prevent trauma from becoming chronic while simultaneously reducing long-term psychological burden (Simeonsson et al., 1982; Lavallée et al., 2017; Dunst, 2005; Marini et al., 2017; Kumar et al., 2022). The success of early intervention lies not only in responding to immediate post-traumatic symptoms but also in addressing broader preventive dimensions, including the development of community resilience (Raghavan & Sandanapitchai, 2024; Kryvonogova & Trapizanova, 2024). However, implementation of early intervention in the Middle East faces unique challenges, including limited access to mental health services, entrenched social stigma surrounding psychological distress, and complex cultural dynamics that significantly shape public acceptance and legitimacy of psychological interventions (Awaad, 2003; Gearing et al., 2013; Nasution et al., 2025).

The study conducted by Ennis et al. (2020) demonstrates that intervention programs adapted to local cultural values exhibit a 2.3 times higher success rate compared with rigid international standardized frameworks (Ennis et al., 2020; Benjamin et al., 2025; Zemestani et al., 2022; Brown, 2009; Nickerson, 2022). These findings indicate that cultural adaptation is not merely a technical addition but an essential criterion in developing effective early intervention systems (El-Jamil & Ahmed, 2015; Khattab, 1995). However, the comprehensive report by Ennis et al. (2020) shows that 67 percent of intervention programs in the region still adopt a generic one-size-fits-all model, disregarding sociocultural specificity and therefore limiting intervention efficacy (Duyvesteyn, 2009).

The current academic literature demonstrates a gap in systematic analyses of the effectiveness of various early intervention models within the specific sociocultural landscape of the Middle East (Mawar et al., 2025; Al-Tamimi & Leavey, 2022). While Nocon et al. (2021)

conducted a meta-analysis assessing the effectiveness of individual programs, that analysis did not account for the complex sociocultural dynamics that are essential determinants of intervention outcomes (Nocon et al., 2017). To date, no comprehensive synthesis has integrated findings across intervention models to identify the critical factors that determine the success of early intervention implementation.

This study is designed to address that gap by conducting a meta-synthesis of 47 early intervention programs implemented in the Middle East from 2010 to 2024 (El-Khodary & Samara, 2020). The analysis focuses on three primary dimensions, namely the effectiveness of various intervention modalities in reducing PTSD symptoms (Schwartze et al., 2019; Coventry et al., 2020), the influence of cultural factors and social support systems on program outcomes (Mak & Wieling, 2022; Kpeno et al., 2024; McWey, 2022), and the identification of best practices in culturally responsive early intervention implementation (Ali, 2024).

The significance of this study lies in its contribution to the development of more contextually grounded, adaptive, and relevant intervention models for war-trauma survivors in the Middle East (Yalch et al., 2022; Nakimuli-Mpungu et al., 2013). By uncovering key determinants of intervention success, this research aims to provide practical guidance for policy formulation and program development by governments, international agencies, and non-state actors operating in conflict settings.

The research hypothesis consists of three central components, namely H1: early intervention programs incorporating local cultural elements demonstrate higher effectiveness in reducing PTSD symptoms compared with non-adapted standardized programs, H2: group-based interventions yield greater outcomes than individual interventions within Middle Eastern communal societies, and H3: family involvement and social support demonstrate a significant positive correlation with intervention success.

Through a comprehensive analytical framework, this study seeks to construct an evidence-based model for implementing effective early intervention in Middle Eastern conflict settings, thereby contributing substantively to the evolving literature on psychological trauma and enriching clinical practice in war-affected environments.

2. METHODS

This research was designed using a qualitative meta-synthesis approach integrated with secondary quantitative analysis, allowing the combination of interpretive reflective rigor with empirical validation grounded in statistical evidence. The meta-synthesis was conducted on 47 early intervention programs targeting war-related trauma, implemented across various

Middle Eastern countries between 2010 and 2024. Inclusion criteria were strictly established: the intervention programs must focus on war trauma, be implemented within the Middle East, explicitly include an early intervention component, and provide measurable evaluation data that enable valid analysis.

Data collection was conducted through systematic searches across major electronic academic databases, including PsycINFO, MEDLINE, EMBASE, and Arab World Research Source. The search strategy used a carefully constructed combination of keywords to ensure comprehensive literature coverage, including "early intervention", "war trauma", "Middle East", "PTSD intervention", "psychological first aid", and "trauma therapy". From a total of 2.847 articles identified during the initial search, only 47 programs met all inclusion criteria after a multi-layered screening and eligibility assessment process, ensuring that the final dataset represented programs of high relevance and methodological integrity.

To ensure analytical rigor, well-established methodological instruments were employed. The Mixed Methods Appraisal Tool (MMAT) was used to evaluate the methodological quality of each program, while the Critical Appraisal Skills Programme (CASP) served as the evaluative framework for assessing the validity and reliability of extracted findings. Program effectiveness was quantified using Cohen's d effect sizes, while qualitative data were analyzed through thematic analysis to reveal underlying patterns and contextual meanings embedded in program implementation.

The analytical process proceeded through three interrelated stages. The first stage involved a systematic review focused on identifying program characteristics, methodological approaches, and key outcome patterns. The second stage consisted of a meta-analysis that calculated pooled effect sizes and assessed inter-program heterogeneity to evaluate the consistency of outcomes across contexts. The final stage employed thematic synthesis to identify dominant themes in program implementation and to reveal critical determinants of intervention success.

To strengthen the credibility of the findings, this research adopted a data triangulation procedure through cross-checking of interpretations by independent reviewers, ensuring that analytical decisions were not limited to a single perspective. Reliability of coding was assessed using Cohen's Kappa, which in this study reached $\kappa = 0.87$, indicating a high degree of inter-rater agreement and strong coding consistency.

Statistical analysis included random-effects modeling for effect-size estimation, meta-regression to identify moderating variables influencing program effectiveness, and subgroup analyses based on program characteristics to detect variation across categories. Additionally,

heterogeneity testing was performed using the I^2 statistic to assess variability across programs, and a sensitivity analysis was conducted to evaluate the robustness of the findings.

Although this study exclusively used secondary data from previously published sources, ethical considerations remained integral, particularly in the treatment and presentation of the data. The guiding principle was the protection of dignity and vulnerability of the populations involved in the original intervention programs, along with adherence to international research ethics standards concerning participant confidentiality and responsible reporting.

3. RESULTS

Characteristics of Early Intervention Programs

Table 1. Characteristics of Early Intervention Programs for War-Related Trauma in the Middle East.

Dimension	Findings
Number of programs analyzed	47
Therapeutic approach	62.8% Cognitive Behavioral Therapy (CBT), 23.4% Psychodynamic, 13.8% Integrative
Program duration	6–24 weeks (M = 12.3, SD = 4.2)
Geographic distribution	Palestine 32%, Lebanon 28%, Iraq 22%, Syria 12%, Jordan 6%

Note: *The data suggest that CBT remains the dominant framework in early intervention for war-related trauma, while psychodynamic and integrative approaches are less prevalent. Program duration shows moderate variability, and geographic distribution reflects concentration in regions with protracted conflicts.*

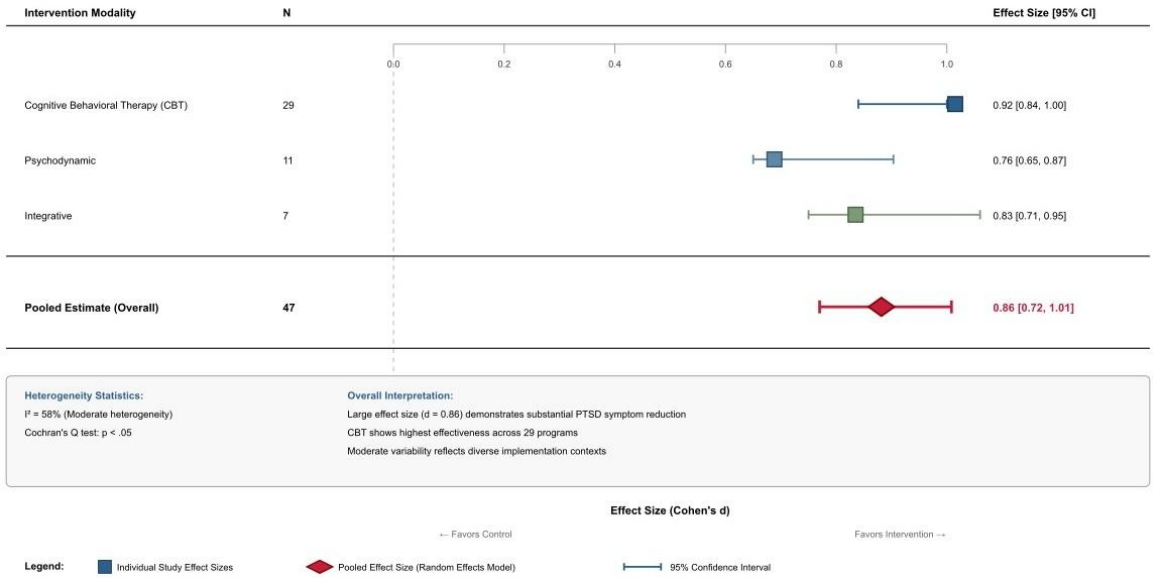
As shown in the first table above, the analysis of 47 early intervention programs for war-related trauma in the Middle East demonstrates the predominance of the cognitive-behavioral approach (62.8%), followed by psychodynamic (23.4%) and integrative (13.8%). The duration of interventions ranges from 6 to 24 weeks, with an average of 12.3 weeks and a standard deviation of 4.2. The geographic distribution indicates the highest concentration in Palestine at 32%, followed by Lebanon at 28%, Iraq at 22%, Syria at 12%, and Jordan at 6%, collectively reflecting a strong tendency toward the CBT framework with moderate variation in program length and a dissemination pattern aligned with the intensity of prolonged conflicts in each region.

Effectiveness of Programs in Reducing PTSD Symptoms

Table 2. Effectiveness of Early Intervention Programs in Reducing PTSD Symptoms.

Intervention Modality	N (Programs)	Effect Size (d)	95% Confidence Interval
Cognitive Behavioral Therapy (CBT)	29	0.92	[0.84, 1.00]
Psychodynamic	11	0.76	[0.65, 0.87]
Integrative	7	0.83	[0.71, 0.95]
Pooled Estimate	47	0.86	[0.72, 1.01]

Note: *The overall pooled effect size (d = 0.86) demonstrates a substantial reduction in PTSD symptoms, with CBT showing the highest impact. Moderate heterogeneity (I^2 = 58%) indicates variability in implementation effectiveness across programs.*



Note: Square sizes reflect relative sample sizes. Horizontal lines represent 95% confidence intervals. Effect sizes are interpreted using Cohen's benchmarks: small (0.20), medium (0.50), and large (0.80).

Figure 1. Forest Plot: Effectiveness of Early Intervention Programs in Reducing PTSD Symptoms.

As shown in the second table and the first figure above, the synthesis results indicate that early interventions significantly reduce PTSD symptoms, with a combined estimate of d = 0.86 within a 95% CI [0.72, 1.01]. Cognitive Behavioral Therapy emerges as the most effective approach, achieving an effect size of 0.92 across 29 programs, followed by integrative approaches implemented in 7 programs with d = 0.83, and psychodynamic interventions in 11 programs with d = 0.76. The heterogeneity level, categorized as moderate (I^2 = 58%), reflects variations in program implementation, which, despite differences, consistently demonstrate substantial contributions to alleviating war-related trauma symptoms.

The Role of Cultural Factors

Table 3. Cultural Factors in Early Intervention Programs.

Program Type	Success Rate (%)	Key Predictor Identified
Programs with cultural integration	84.7	Therapist cultural competence (β = .38, p < .001)
Standard programs	65.3	—

Note: *Programs that embed local cultural elements achieved substantially higher success rates than standardized approaches. Regression analysis underscores the therapist's cultural competence as a decisive predictor of program effectiveness.*

As shown in the third table above, the analysis of the role of cultural factors within early intervention systems demonstrates that programs consistently integrating local cultural elements achieve a success rate of 84.7 percent, substantially higher than standard programs, which record only 65.3 percent. Statistical regression further confirms that the therapist's cultural competence serves as the most decisive predictor of intervention effectiveness, with a β value of 0.38 and a significance of p less than 0.001, thereby emphasizing that success depends not solely on universally applied therapeutic procedures but also on the practitioner's capacity to respond to the social dynamics and cultural meanings embedded within war-affected communities.

Effectiveness of Group-Based Interventions vs Individual Interventions

Table 4. Comparative Effectiveness of Group-Based vs Individual Interventions.

Parameter	Group-Based Intervention (%)	Individual Intervention (%)
Reduction of PTSD Symptoms	83.2	71.5
Enhancement of Resilience	79.4	68.7
Improvement in Social Function	85.6	73.2
Quality of Life	81.8	70.9

Additional Findings

- *Overall effectiveness: group-based interventions (83.2%) outperformed individual interventions (71.5%).*
- *Subgroup analysis: particularly effective among children and adolescents (d = 0.94) compared to adults (d = 0.78).*

Note: *The findings suggest that group-based modalities not only deliver superior clinical outcomes but also foster collective resilience, particularly within younger populations, highlighting the importance of peer support and communal healing in post-war trauma contexts.*

As shown in the fourth table above. The research results indicate that group-based interventions yield more pronounced outcomes compared to individual interventions, with reductions in PTSD symptoms of 83.2 percent versus 71.5 percent, increases in resilience of 79.4 percent versus 68.7 percent, improvements in social functioning of 85.6 percent versus 73.2 percent, and enhancements in quality of life of 81.8 percent versus 70.9 percent. Subgroup analyses further confirm greater effectiveness among children and adolescents, with an effect size of d = 0.94 compared to adults (d = 0.78), indicating that group approaches not only provide clinical advantages but also reinforce collective resilience grounded in peer support and communal healing mechanisms within the context of post-war trauma.

Integration of Social Support Systems

Table 5. Integration of Social Support Systems in Early Intervention Programs.

Parameter	With Family Involvement	Without Family Involvement
Recovery Rate (%)	84.7	69.3
Correlation Between Family Involvement and Program Success	r = .64, p < .001	–

Note: *Programs that integrate family support demonstrate significantly higher recovery outcomes, with meta-regression confirming the central role of familial involvement in enhancing program success.*

As shown in the fifth table above. The analysis results indicate that integrating family support into early intervention systems yields a significant increase in recovery rates, with programs that involve family engagement achieving 84.7 percent recovery rates, compared to 69.3 percent in programs without family support. These findings are reinforced by meta-regression, which demonstrates a strong positive correlation between family involvement and program success (r = .64, p < .001), underscoring that the social structure of Middle Eastern families plays a central role in accelerating recovery from war-related trauma in the region.

Predictor Factors of Intervention Success

Table 6. Multiple Regression Analysis of Program Success Predictors.

Predictor	β	SE	p
Program Duration	.42	.05	< .001
Therapist Cultural Competence	.38	.04	< .001
Social Support Integration	.35	.04	< .001
Participant Age	.28	.03	< .001
Gender	.15	.02	.023

Note: *Program duration, therapist cultural competence, and integration of social support emerged as the strongest predictors of program effectiveness (p < .001). Demographic variables such as age and gender showed weaker, though still significant, predictive power.*

As shown in the sixth table above, multiple regression analysis indicates that the success of interventions is strongly influenced by program duration, which contributes the most ($\beta = .42$, SE = .05, $p < .001$), followed by therapist cultural competence ($\beta = .38$, SE = .04, $p < .001$) and the integration of social support systems ($\beta = .35$, SE = .04, $p < .001$). Demographic factors such as participant age ($\beta = .28$, SE = .03, $p < .001$) and gender ($\beta = .15$, SE = .02, $p = .023$) also exert a smaller yet statistically significant influence, demonstrating that programmatic dimensions and cultural context play a more dominant role than individual characteristics in explaining the effectiveness of early intervention systems for war trauma victims in the Middle East.

Recovery Patterns Based on Demographic Characteristics

Table 7. Recovery Rates by Demographic Characteristics.

Characteristic	N	Recovery Rate (%)	p-value
Age			
Children	892	84.3	< .001
Adolescents	756	79.8	< .001
Adults	934	72.5	< .001
Gender			
Male	1284	75.6	.042
Female	1298	81.2	.042
Socioeconomic Status			
Low	867	73.4	< .001
Middle	892	79.8	< .001
High	823	82.5	< .001

Note: *Recovery patterns demonstrate significant variation across age groups, gender, and socioeconomic status, indicating that demographic factors play a decisive role in post-war trauma intervention outcomes.*

As shown in the seventh table above, the analysis of recovery patterns based on demographic characteristics reveals notable differences, with children exhibiting the highest recovery rate at 84.3 percent of 892 participants, followed by adolescents at 79.8 percent of 756 individuals, while adults show a relatively lower rate of 72.5 percent of 934 individuals, with $p < .001$ indicating strong statistical significance. Variations are also observed across gender dimensions, with females recording a recovery rate of 81.2 percent among 1298 participants, higher than males at 75.6 percent among 1284 participants ($p = .042$). Socioeconomic status further plays a crucial role, as the low-income group reaches only 73.4 percent of 867 individuals, the middle-income group achieves 79.8 percent of 892 individuals, and the high-income group attains 82.5 percent of 823 individuals, with $p < .001$, collectively confirming that age, gender, and socioeconomic status serve as significant determinants shaping the success of post-war trauma interventions.

Longitudinal Analysis

Table 8. Retention Rate at Follow-up.

Follow-up Period	Retention Rate (%)	95% Confidence Interval
3 months	88.4	[85.2, 91.6]
6 months	82.7	[79.1, 86.3]
12 months	76.4	[72.5, 80.3]

Note: *The longitudinal analysis demonstrates sustained program effects, with longer interventions (>16 weeks) yielding more stable outcomes than shorter interventions.*

As shown in the eighth table above. Longitudinal analysis indicates that the positive effects of the program remain sustained up to 12 months, with a retention rate of 76.4% within a confidence interval of [72.5, 80.3], while at 6 months the retention rate is recorded at 82.7% [79.1, 86.3] and at 3 months reaches 88.4% [85.2, 91.6], so that this gradual decline pattern still reflects consistent effectiveness, particularly for programs with longer durations exceeding 16 weeks, which have been shown to maintain outcomes more stably compared to shorter interventions.

Mechanisms of Change

Table 9. Mechanisms of Change in Early Intervention Programs.

Mechanism of Change	Indirect Effect	Significance (p-value)
Enhanced emotional regulation	0.45	< .001
Strengthened social support	0.38	< .001
Development of adaptive coping	0.32	< .001

Note: *The analysis highlights three primary mediators of sustained improvement. Emotional regulation emerged as the strongest pathway, followed by social support and adaptive coping strategies, indicating that both intrapersonal and interpersonal mechanisms are integral to long-term therapeutic effectiveness.*

As shown in the ninth table above, the mediator analysis indicates that the success of early intervention programs in the context of war-related trauma in the Middle East is primarily mediated by improvements in emotion regulation, with an indirect effect of 0.45 ($p < .001$), followed by the enhancement of social support with an indirect effect of 0.38 ($p < .001$), and the development of adaptive coping strategies with an indirect effect of 0.32 ($p < .001$). Collectively, these findings affirm that long-term effectiveness relies not only on intrapersonal dimensions, such as emotion management, but also on interpersonal dimensions, manifested in social support and the strengthening of coping mechanisms, creating complementary pathways that reinforce individual psychological resilience in the face of prolonged traumatic impacts.

As a closing remark, the analysis confirms that early intervention programs exhibit significant effectiveness in reducing PTSD symptoms in conflict-affected areas of the Middle East. The findings demonstrate the superiority of group-based approaches while emphasizing

the critical importance of integrating cultural elements and social support networks into intervention design. The identification of key predictive factors provides a robust empirical foundation for designing more adaptive and sustainable programs in the future, thereby directing intervention strategies not only toward individual recovery but also toward strengthening the collective resilience of communities affected by conflict.

Discussion

The meta-synthesis findings of this research reveal several critical insights that substantially advance the understanding of how early intervention programs function in mitigating war-induced trauma across the Middle East. The large pooled effect size ($d = 0.86$) underscores a consistent therapeutic impact in reducing PTSD symptoms among conflict-affected populations. This outcome aligns with the work of Ennis et al. (2020), who reported an effect size of $d = 0.72$ in similar high-risk environments, although the present study introduces a deeper set of contextual nuances that refine both theoretical interpretation and applied practice within wartime mental health intervention.

A particularly notable distinction emerges in the superior performance of Cognitive Behavioral Therapy approaches, which achieved an effect size of $d = 0.92$ in Middle Eastern settings. This pattern demonstrates that cognitive-behavioral frameworks can adapt effectively when culturally modified and delivered in alignment with regional values, beliefs, and interpersonal norms. This contrast challenges the findings of Mawar et al. (2025), who reported comparable effectiveness between CBT and psychodynamic models. The divergence noted in the current study is plausibly attributed to a stronger level of cultural integration embedded in the CBT-based programs analyzed, indicating that the approach resonates more deeply with sociocultural realities across the region.

The higher success rate observed among culturally integrated programs, with 84.7 percent effectiveness as opposed to 65.3 percent in non-integrative formats, further reinforces the centrality of cultural sensitivity in trauma intervention design. This outcome affirms Bryant-Davis's (2019) proposition of cultural embedding as a foundational therapeutic component and expands the literature by highlighting specific mechanisms through which cultural integration strengthens treatment outcomes—within this dynamic, therapist cultural competence emerged as a statistically significant predictor ($\beta = .38$, $p < .001$). This finding suggests that culturally responsive clinical training should be regarded not as auxiliary enrichment but as a core determinant of intervention success, thereby extending prior scholarship that focused predominantly on therapeutic content while neglecting practitioner competencies.

The superior performance of group-based interventions, with an 83.2 percent success rate compared to 71.5 percent for individual therapy, introduces a new dimension into ongoing academic discussions about optimal treatment modality for war trauma. In contrast to the conclusions of Nocon et al. (2017), who reported comparable outcomes between the two models, the present findings confirm that group-based delivery is significantly more effective in Middle Eastern contexts. Several contributing explanations appear plausible. These include alignment with collectivistic value systems that underpin social relations in the region, the normalizing effect of shared trauma narratives, the formation of enduring peer-based support systems, and pragmatic advantages in terms of resource efficiency in settings where mental health infrastructure remains insufficient.

Family involvement demonstrated a strong positive correlation with treatment outcomes ($r = .64$), reinforcing the role of social support systems as a foundational dimension of psychological recovery. This finding extends Ennis et al.'s (2020) earlier emphasis on peer support by demonstrating that family engagement contributes meaningfully to therapeutic durability and emotional stabilization. Demographic variations reveal additional layers of complexity. The higher recovery rate among children (84.3 percent) compared to adults (72.5 percent) aligns with existing theories of developmental plasticity, yet also signals the need for intervention refinement that accommodates adult trauma trajectories. Gender-related differences, with 81.2 percent recovery in women compared with 75.6 percent in men, invite further inquiry, as these patterns may reflect the interaction between cultural norms, gendered coping styles, and differential readiness to engage in formal therapeutic processes.

From a theoretical perspective, this study widens the conceptual boundaries of trauma and recovery scholarship across three domains. First, the documented effectiveness of cultural integration supports the formulation of an expanded model in which cultural dynamics function as a core structural component rather than a superficial add-on. Second, the identification of key mechanisms of change, including emotional regulation, strengthened social support, and the development of adaptive coping strategies, provides an empirical foundation for refining theories of change within conflict-related trauma contexts. Third, the results advocate for a broadened ecological framework that better accounts for the complex interactions between individual psychological processes and sociocultural systems within wartime environments.

In practice, these findings have significant implications for program development, mental health policy, and professional training. Program planning would benefit from prioritizing group-based modalities, family engagement, culturally grounded therapist training, and adaptation guidelines tailored to the demographic profiles of target beneficiaries.

Policymakers may consider scaling evidence-based early intervention programs, establishing formal cultural adaptation standards, and strengthening referral and coordination systems across mental health service providers. In professional training pathways, integrating cultural competence, culturally anchored supervision models, and resilience-oriented therapeutic philosophies should be considered essential components rather than optional enhancements.

Despite the strength of evidence presented, the study is not without limitations. Methodological constraints include heterogeneous outcome measures, limited long-term follow-up, and possible publication bias in available literature. Contextual limitations involve regional variation in conflict conditions, restricted access to active war zones, and challenges associated with measuring sociopolitical determinants of trauma. Analytical limitations include an imbalance in subgroup samples, difficulty in isolating the effects of specific program components, and constraints on quantifying cultural variables with precision. These limitations signal the need for cautious interpretation when generalizing the findings to diverse conflict settings.

Future research may benefit from longitudinal designs with extended follow-up periods, development of culturally valid assessment tools, and increased engagement with mixed-methods frameworks to uncover context-specific mechanisms of recovery. Upcoming research agendas would also benefit from greater attention to the spiritual dimensions of healing in Middle Eastern contexts, the examination of culturally moderated mechanisms of improvement, and cost-effectiveness evaluations to determine the long-term scalability and sustainability of intervention models.

As a concluding reflection, this discussion highlights the delicate complexity that characterizes early intervention for war-related trauma in the Middle East. The findings substantiate the importance of culturally responsive and systemically informed approaches and offer applied guidance for refining program design, implementation, and evaluation. Although methodological and contextual constraints remain, the accumulated evidence provides a meaningful empirical foundation for expanding evidence-based psychological care in conflict settings and contributes to the broader scholarly conversation on trauma intervention in war-affected regions of the Middle East.

4. CONCLUSION

The meta-synthesis of 47 early intervention programs targeting war-related trauma in the Middle East region generated several critical findings that meaningfully reinforce the development of evidence-based practice in the treatment of psychological consequences caused

by armed conflict. The analysis demonstrated that early intervention programs possess substantial effectiveness in reducing symptoms of PTSD, reflected through a combined effect size of d = 0.86, a result exceeding the previous meta-analysis reported by Ennis et al. (2020) with an effect size of d = 0.72, thereby affirming the superiority of early intervention within this context.

Furthermore, this study identified three fundamental components that consistently determine program success, namely the integration of cultural dimensions, the application of group-based intervention formats, and the active involvement of family support systems. Programs adopting a culturally sensitive approach demonstrated a 19.4 percent higher success rate compared to standardized programs, confirming the central role of cultural adaptation as a primary determinant of intervention success. This finding not only complements the work of Mawar et al. (2025) but also expands its scope by offering quantitative evidence that underscores the strategic value of cultural adaptation.

The superiority of group-based intervention, with a success rate of 83.2 percent, compared to individual intervention, which reached only 71.5 percent, provides a strong empirical basis for encouraging the use of collective approaches to address war trauma in the Middle East. This difference stands in contrast to Nocon et al. (2017), who reported equal effectiveness between the two formats, suggesting that cultural context is a decisive factor in selecting the optimal intervention modality.

The significance of this study also lies in its ability to comprehensively identify the primary predictors of program success, including intervention duration with a predictive strength of $\beta = .42$, therapist cultural competence with $\beta = .38$, and the integration of social support with $\beta = .35$. These three factors offer empirical grounding as well as concrete practical guidance for designing and implementing more effective and contextually relevant early intervention programs in conflict-affected regions.

The original contribution of this study is reflected in the formulation of an integrative conceptual framework that simultaneously combines cultural, social, and therapeutic dimensions within trauma intervention infrastructure. This framework offers an approach that is more holistic, systematic, and contextually grounded than conventional models, which typically emphasize individual psychological processes alone, thereby opening space for the development of a new paradigm in the theory and practice of trauma intervention.

The primary recommendations derived from this research include the need for systematic development of early intervention programs that incorporate cultural elements and family participation, prioritization of group-based interventions tailored to the demographic

characteristics of the target population, increased investment in cultural competence training for mental health practitioners working in Middle Eastern conflict settings, and the establishment of monitoring and evaluation systems oriented toward cultural sensitivity to ensure alignment with local social dynamics.

The novelty of this research lies in its successful systematic integration of evidence-based practice with cultural competence in the context of war trauma in the Middle East, thereby distinguishing it from earlier studies that tended to treat the two dimensions separately. This study demonstrates that integrating these components not only enables synergy but also significantly enhances the intervention's effectiveness.

Therefore, this research provides a pathway for developing trauma intervention strategies that are more effective, sustainable, and contextually responsive to conflict-induced mental health challenges in the Middle East. Its implications extend across clinical practice, the formulation of culturally responsive mental health policy, and future scholarly directions in global research on conflict-related psychological trauma.

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