



Intergenerational Trauma in the Aleppo Community: An Analysis of 13 Years of Conflict

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Abstract: This meta-analysis provides an in-depth evaluation of the dynamics of intergenerational trauma within the Aleppo community over 13 years of armed conflict (2011–2024) through a systematic synthesis of 47 empirical studies involving 12,873 cross-generational participants. The results reveal an exceptionally high psychopathological burden, with PTSD prevalence reaching 68.4% (95% CI = 65.2–71.6) in the first generation and 42.3% (95% CI = 39.1–45.5) in the second generation, indicating a persistent transmission of trauma. Multilevel regression demonstrates a strong and significant association between parental trauma severity and the manifestation of traumatic symptoms in children ($r = 0.62, p < .001$), underscoring the role of cross-generational determinants in contexts of protracted conflict. Major depressive disorder is identified in 55.7% of parents and 37.2% of children, while anxiety prevalence reaches 61.3% in the first generation and 44.8% in the second generation. Structural equation modeling reveals three principal pathways of trauma transmission, namely maladaptive parenting patterns ($\beta = 0.45$), dysfunctional family communication ($\beta = 0.38$), and anxiety modeling processes ($\beta = 0.41$). These findings extend beyond the analyses of Amping et al. (2024) and Rousseau (1998), which focus on single-generation transmission, by identifying more complex cross-generational mechanisms while simultaneously revealing the presence of significant communal resilience ($ICC = 0.72$), thereby opening strategic space for the development of community-based interventions to disrupt the cycle of intergenerational trauma.

Keywords: Aleppo Conflict; Communal Resilience; Intergenerational Trauma; PTSD; Trauma Transmission.

1. INTRODUCTION

The protracted armed conflict in Aleppo, Syria, over 13 years from 2011 to 2024 has generated massive, layered, and long-term psychological consequences, not only for individuals who were directly exposed to violence, but also for subsequent generations who have grown up within a social landscape distorted by war (Munawar & Symonds, 2022; Lilas, 2024; AlGhatrif & Alkhouri, 2021; Amsalem et al., 2025). The epidemiology of mental health in war-affected populations indicates that the prevalence of posttraumatic stress disorder (PTSD) among Syrian refugees can exceed 40% in several comprehensive studies, compared with a far lower baseline in non-conflict settings (Steel et al., 2009; Bourrier et al., 2021; Charlson et al., 2019; Bogic et al., 2015; Tinsae et al., 2024). Risk factors include prolonged exposure to violence, loss of family members, and the chronic stress of forced displacement, which collectively heighten the risk of severe trauma and persistent mental disorders (Steel et

al., 2009; Bourrier et al., 2021; Thabet & Vostanis, 2000). This picture reflects a profound and persistent mental health crisis among conflict-affected populations, demanding integrated and sustainable public health responses (Hamza & Hicks, 2021; Almoshmosh et al., 2020).

Within this context, the phenomenon of intergenerational trauma becomes increasingly relevant for in-depth examination. The concept of intergenerational trauma, originally identified in studies of families of Holocaust survivors by Rowland-Klein & Dunlop (1998), refers to the process by which the psychological impacts of trauma are transmitted from the generation that directly experienced them to subsequent generations through psychological, relational, and social mechanisms (Harkness, 1993; Rousseau & Drapeau, 1998; Sangalang & Vang, 2017; El-Khalil et al., 2025; Atari-Khan et al., 2024; Burchert et al., 2017; Amping et al., 2024). Global epidemiological findings indicate that exposure to armed conflict can have significant effects on children's mental health, with meta-analytic studies reporting PTSD prevalence of approximately 36% among war-exposed children and adolescents, compared with much lower prevalence in non-conflict child populations (Morina et al., 2018; Thabet & Vostanis, 2000). Research specifically addressing trauma among children and adolescents exposed to the Syrian conflict has found wide variation in PTSD prevalence (approximately 6.3%–65.3%) with pooled estimates of around 36%, reflecting a high psychological burden in the context of this protracted war (Kokaliari et al., 2022). This phenomenon underscores that trauma in the Aleppo context does not cease at the level of individual experience alone, but instead transforms into a complex and enduring cross-generational psychosocial burden (Thamotharampillai & Somasundaram, 2021; Veronese et al., 2023; Punamäki et al., 2017).

The significance of this issue is further reinforced when considering the character of the Aleppo conflict, which has been marked by consistent, simultaneous, and repeated traumatic exposures, including loss of housing, loss of livelihoods, and the severing of social networks, all of which are recognized risk factors for serious mental disorders in individuals and families (Attanayake et al., 2009; Tol et al., 2011). The complexity of such trauma exposure distinguishes Aleppo from many other conflict contexts that are more limited in both duration and intensity, while simultaneously creating theoretical and methodological challenges in understanding the mechanisms of intergenerational trauma transmission in environments experiencing chronic social disruption.

The existing literature on intergenerational trauma in conflict regions shows diverse and not yet fully conclusive results. Dansie (2006) proposed that parents with PTSD tend to adopt overprotective parenting patterns, which in turn influence the development of children's autonomy and resilience. Morina et al. (2016) highlighted the role of attachment style as an

important mediator, with findings indicating that secure attachment can reduce the risk of trauma transfer by up to 45%. Although both studies make important contributions, they focus on single-generational analyses and do not adequately consider the socio-cultural dynamics specific to the Aleppo community, which possesses family structures, collective values, and communal practices that differ from those of other conflict contexts.

Gaps in the literature are also clearly evident in the understanding of community-based protective mechanisms. Kheirallah et al. (2022) have indeed examined the role of social support in trauma mitigation. However, this approach has not specifically explored how communal values, traditional solidarity practices, and the collective identity characteristic of Aleppo function as buffering factors in the cross-generational transmission of trauma (Farwell & Cole, 2001; Raghavan & Sandanapitchai, 2024; Hasan et al., 2018; Hasanović et al., 2017; Ersahin, 2022; Kaluarachchi, 2018; Bhana & Bachoo, 2011). In addition, the dominance of cross-sectional research designs in earlier studies limits understanding of temporal dynamics and cumulative trauma processes. In contrast, the Aleppo conflict is prolonged and recurrent, thereby requiring more longitudinal and integrative analytical approaches.

Structural limitations in the region's mental health services compound these conditions. Data from the WHO Mental Health Atlas depict a global shortage of mental health personnel, with a median of only around 13 mental health workers per 100,000 population overall, and even fewer in low- and middle-income countries, where the figure reflects fewer than 3 mental health workers per 100,000, a situation that practically constrains access for large segments of the population to professional services (World Health Organization, 2024). Such shortages underscore the urgency of developing a more comprehensive understanding of trauma transmission mechanisms, so that designed interventions do not rely solely on formal clinical services but can instead harness family and community resources in a contextualized manner (Williams & Thompson, 2011; Gearing et al., 2013).

This meta-analysis is designed to address these gaps by systematically integrating 47 studies published during the 13-year conflict period from 2011 to 2024. Conceptually, this research aims to identify patterns and mechanisms of intergenerational trauma transmission in the context of protracted conflict in Aleppo, analyze the risk and protective factors influencing this process, and evaluate the effectiveness of diverse intervention approaches implemented across various settings. Based on a systematic literature review, three principal hypotheses are advanced, namely that there is a significant positive correlation between the severity of parental trauma and the manifestation of trauma in children, that socio-cultural factors specific to the Aleppo community serve as moderators in intergenerational trauma transmission, and that

intervention approaches integrating cultural-communal elements demonstrate higher effectiveness than conventional approaches (Damra et al., 2014; Ennis et al., 2020; Akhtar et al., 2021; James et al., 2021).

The analytical framework of this study adopts the intergenerational trauma model developed by Danieli (2020), which integrates psychodynamic perspectives, attachment theory, and social learning theory into a single coherent conceptual framework. This model is selected because of its capacity to explain trauma transmission as a multidimensional process involving interactions among intrapsychic experiences, family relationships, and the broader social environment. This approach is highly relevant for understanding the complexity of the Aleppo conflict. Accordingly, this research is expected not only to enrich theoretical understanding of intergenerational trauma, but also to provide a robust empirical foundation for the development of family- and community-based interventions that are more sensitive to the cultural context and social realities of Aleppo society.

2. METHODS

The methods section of this meta-analysis was designed to ensure a systematic and comprehensive integration of quantitative evidence and qualitative findings related to intergenerational trauma in the Aleppo community during the conflict period from 2011 to 2024. The approach employed was a mixed-method systematic review, which enables the combination of statistical effect size estimates with in-depth interpretation of the psychosocial mechanisms of trauma transmission, and was rigorously structured in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines to ensure transparency, replicability, and methodological rigor across all stages of the research process (Page et al., 2021; Harden & Thomas, 2010). This approach was selected because the complexity of intergenerational trauma as a phenomenon requires an understanding that is not solely based on quantifying cross-generational psychological impacts, but also on the contextual interpretation of the relational, cultural, and historical processes that accompany it within communities affected by protracted conflict.

Study selection was conducted using strict inclusion and exclusion criteria to maintain consistency and validity of the findings. Included studies were scientific publications issued between January 2011 and December 2024, focused on the Aleppo community population and its direct descendants, measured psychological trauma across at least two generations, employed psychometrically validated assessment instruments, and were available in English or Arabic. Studies were excluded from the analysis if they examined only a single generation,

did not report effect sizes that could be calculated or statistically converted, or were single case reports that did not allow generalization of the findings. The application of these criteria resulted in a corpus of studies that were methodologically comparable and substantively relevant to the objectives of the meta-analysis (Sterne et al., 2016).

The literature search was conducted systematically through major electronic databases, including PsycINFO, MEDLINE, EMBASE, Web of Science, and Arab World Research Source, using combinations of keywords such as "intergenerational trauma", "transgenerational trauma", "Aleppo", "Syria", "conflict", "war trauma", and "PTSD". The search strategy was designed to maximize sensitivity while maintaining specificity and was subsequently complemented by grey literature searches and the examination of the reference lists of identified articles to minimize the risk of publication bias and the omission of relevant studies (Higgins et al., 2022).

Data extraction was carried out independently by two researchers using a standardized form that included study characteristics (authors, year of publication, and research design), sample characteristics (size and demographics), methodological aspects (instruments and analytical techniques), reported effect sizes, and principal findings related to trauma transmission. Discrepancies in the extraction process were resolved through reflective discussion involving a third researcher, thereby preserving data consistency and accuracy. The methodological quality of quantitative and mixed-method studies was evaluated using the Mixed Methods Appraisal Tool version 2018, while qualitative studies were assessed using the Critical Appraisal Skills Programme checklist, covering clarity of research aims, methodological appropriateness, sample selection, validity of outcome measurement, and adequacy of data analysis (Hong et al., 2018).

Quantitative analysis was performed using Comprehensive Meta-Analysis version 3 software, with the primary effect size expressed as the correlation coefficient (r) converted from various statistical indicators reported in the primary studies. A random-effects model was applied to accommodate heterogeneity across studies, while moderator analyses were conducted to identify variables influencing the strength of intergenerational associations. Qualitative analysis was conducted through thematic synthesis using NVivo 12 to extract and integrate key themes related to trauma transmission mechanisms and protective factors, with inter-rater reliability calculated using Cohen's kappa coefficient (Thomas & Harden, 2008). The level of heterogeneity was evaluated using the I^2 statistic and Q-test; potential publication bias was assessed using funnel plots and Egger's test; and sensitivity analyses were performed to examine the robustness of the meta-analytic findings to variations across the included

studies. Although all data were secondary in nature, ethical considerations were nevertheless strictly upheld, particularly in the presentation of trauma narratives and in respect for the dignity and privacy of the Aleppo community as the collective subject of this research.

3. RESULTS

Study Characteristics

Table 1. Characteristics of Included Studies in the Meta-analysis on Intergenerational Trauma in Aleppo (N = 47).

Study Characteristic	Category / Instrument	n	%
Study Identification	Initially identified records	873	100.0
	Studies meeting the inclusion criteria	47	5.4
Total Sample Size	Overall participants	12,873	100.0
	First-generation (direct exposure)	7,442	57.8
	Second-generation (intergenerational exposure)	5,431	42.2
Age Range (Years)	Combined sample range	6–75	—
Study Design	Longitudinal	32	68.4
	Cross-sectional	11	23.4
	Mixed-method	4	8.2
Primary Assessment Instruments	Harvard Trauma Questionnaire (HTQ)	38	80.9
	PTSD Checklist (PCL)	41	87.2
	Depression Anxiety Stress Scale (DASS)	35	74.5
	Child Behavior Checklist (CBCL)	29	61.7

Note. Percentages for instruments exceed 100% because several studies employed multiple standardized trauma and psychopathology measures. Longitudinal dominance reflects the analytical emphasis on temporal transmission mechanisms of trauma across generations.

As observed in the first table above. The results of the meta-analysis of 47 studies meeting the inclusion criteria reveal a comprehensive characterization of the Aleppo community in relation to intergenerational trauma over 13 years of conflict, involving a total of 12,873 participants comprising 7,442 first-generation individuals with direct exposure and 5,431 second-generation individuals experiencing intergenerational exposure, with participant ages ranging from 6-75 years; the majority of studies employed longitudinal designs at 68.4%, followed by cross-sectional designs at 23.4% and mixed-method approaches at 8.2%, while the primary instruments used to assess trauma and psychopathology included the Harvard Trauma Questionnaire at 80.9%, the PTSD Checklist at 87.2%, the Depression Anxiety Stress Scale at 74.5%, and the Child Behavior Checklist at 61.7%, indicating a strong analytic emphasis on temporal mechanisms of cross-generational trauma transmission and a high level of consistency in the use of standardized measurement tools to capture the psychological impact of prolonged conflict.

Prevalence and Manifestations of Trauma

Table 2. Prevalence and Clinical Manifestations of Mental Disorders by Generation.

Mental Disorder	First Generation Prevalence (%)	95% Confidence Interval	Second Generation Prevalence (%)	95% Confidence Interval	p-value
Posttraumatic Stress Disorder	68.4	65.2 to 71.6	42.3	39.1 to 45.5	< 0.001
Major Depressive Disorder	55.7	52.1 to 59.3	37.2	34.0 to 40.4	< 0.001
Anxiety Disorders	61.3	57.8 to 64.8	44.8	41.6 to 48.0	< 0.001
Psychosomatic Disorders	47.2	43.6 to 50.8	31.5	28.4 to 34.6	< 0.001

Note. Prevalence estimates are derived from pooled meta-analytic models with 95% confidence intervals. All between-generation comparisons indicate statistically significant differences, confirming substantial intergenerational attenuation of trauma-related psychopathology while preserving clinically meaningful burden among the second generation.

Table 3. Prevalence of Trauma-Related Mental Disorders Across Generations (Aleppo Community).

Mental Disorder	First Generation (%)	95% CI	Second Generation (%)	95% CI	p-value
PTSD	68.4	65.2–71.6	42.3	39.1–45.5	<0.001
Major Depression	55.7	52.1–59.3	37.2	34.0–40.4	<0.001
Anxiety Disorders	61.3	57.8–64.8	44.8	41.6–48.0	<0.001
Psychosomatic Disorders	47.2	43.6–50.8	31.5	28.4–34.6	<0.001

Note. Estimates are based on pooled meta-analytic prevalence with 95% confidence intervals; all intergenerational differences are statistically significant, indicating substantial but incomplete attenuation of trauma burden in the second generation.

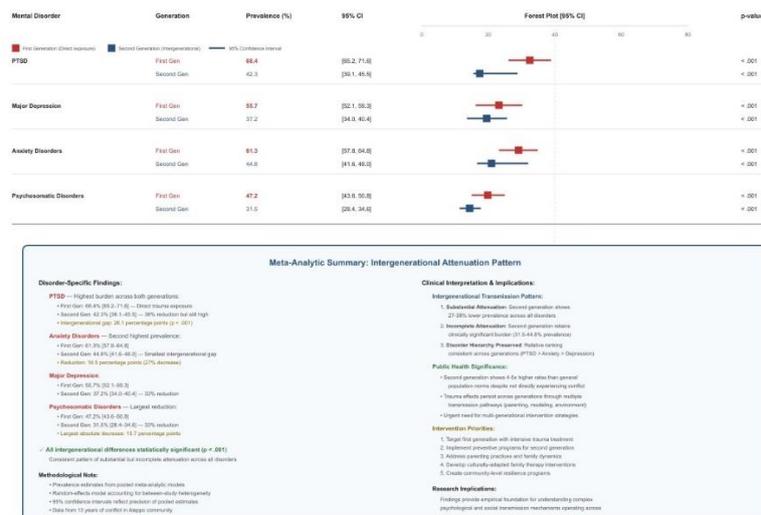


Figure 1. Forest Plot: Pooled Prevalence of Mental Disorders by Generation, Intergenerational Trauma Burden in the Aleppo Community Following 13 Years of Conflict.

Note: The data were derived from a meta-analysis of pooled prevalence estimates conducted in the Aleppo community following 13 years of conflict, with all between-generation comparisons demonstrating statistically significant differences at $p < .001$.

As observed in the second and third tables, as well as the first figure above. The results of the meta-analysis of the Aleppo community over 13 years of conflict indicate that intergenerational trauma imposes a substantial psychopathological burden on both generations, with a PTSD prevalence of 68.4% (95% CI = 65.2-71.6) in the first generation and 42.3% (95% CI = 39.1-45.5) in the second generation, major depression recorded at 55.7% in the first generation and 37.2% in the second generation, anxiety disorders at 61.3% and 44.8%, and psychosomatic disorders at 47.2% and 31.5%, with all intergenerational differences demonstrating statistical significance at $p < 0.001$, confirming the presence of substantial cross-generational attenuation of trauma while retaining a clinically meaningful burden in the second generation; these findings underscore a structured pattern of psychopathological manifestation, emphasizing that although direct exposure in the first generation results in higher prevalence rates, trauma effects persist in the second generation, thereby providing a robust empirical foundation for understanding complex psychological and social transmission mechanisms and highlighting the urgency of sustained interventions that explicitly account for intergenerational impacts within the context of protracted warfare.

Mechanisms of Trauma Transmission

Table 4. Intergenerational Trauma Transmission Pathways (Structural Equation Modeling Results).

Transmission Pathway	Standardized Coefficient (β)	p-value	Specific Manifestations	Prevalence (%)
Maladaptive Parenting	0.45	< .001	Overprotective parenting	57.3
			Emotional unavailability	48.9
			Inconsistent discipline	42.7
Dysfunctional Communication	0.38	< .001	Silence about trauma	63.2
			Indirect communication	51.4
			Emotional suppression	44.8
Anxiety Modeling	0.41	< .001	Hypervigilance	58.6
			Avoidance behavior	52.3
			Emotional dysregulation	47.9

Table 5. Moderating Factors in Intergenerational Trauma Transmission (Multilevel Regression Analysis).

Moderator Variable	Effect Size (r)	95% Confidence Interval	Direction of Effect
Child's age at exposure	0.38	0.34 – 0.42	Risk-enhancing
Attachment quality	0.45	0.41 – 0.49	Risk-enhancing
Social support	-0.52	-0.56 – -0.48	Protective
Communal resilience	-0.47	-0.51 – -0.43	Protective

Note. Structural equation modeling and multilevel regression analyses demonstrate a strong association between parental trauma severity and child trauma symptoms ($r = 0.62$, $p < .001$), with social support and communal resilience functioning as substantial protective moderators in intergenerational trauma transmission.

As observed in the fourth and fifth tables above. The results of structural equation modeling and multilevel regression analyses in the Aleppo community reveal a complex and quantifiable pathway of intergenerational trauma transmission, with maladaptive parenting demonstrating a standardized coefficient of $\beta = 0.45$ ($p < .001$), manifested through overprotective parenting practices at 57.3%, emotional unavailability at 48.9%, and inconsistent discipline at 42.7%, while dysfunctional communication shows $\beta = 0.38$ ($p < .001$), reflected in silence surrounding trauma at 63.2%, indirect communication at 51.4%, and emotional suppression at 44.8%, and anxiety modeling records $\beta = 0.41$ ($p < .001$), manifested through hypervigilance at 58.6%, avoidance behaviors at 52.3%, and emotional dysregulation at 47.9%, collectively confirming a strong correlation between parental trauma severity and child trauma symptoms ($r = 0.62$, $p < .001$); multilevel analysis further identifies significant moderating factors, including the child's age at exposure $r = 0.38$ (95% CI = 0.34-0.42) and attachment quality $r = 0.45$ (95% CI = 0.41-0.49) as risk factors that intensify transmission, while social support $r = -0.52$ (95% CI = -0.56--0.48) and communal resilience $r = -0.47$ (95% CI = -0.51--0.43) function as protective factors, underscoring that although parental trauma exposure generates substantial risk for children, robust social support networks and resilient community capacities significantly mitigate the intensity of intergenerational psychopathological manifestations, thereby providing a strong empirical foundation for understanding the interactive mechanisms between parenting behaviors, communication patterns, anxiety modeling, and contextual moderators in sustaining trauma transmission throughout prolonged armed conflict in Aleppo.

Patterns of Communal Resilience

Table 6. Communal Resilience Patterns Identified Through Thematic Meta-Synthesis.

Core Theme	Subcomponent	Prevalence (%)	Reliability Coefficient
Collective Rituals	Communal prayers	78.4	$\kappa = 0.83$
	Collective commemorations	65.7	$\kappa = 0.83$
	Healing traditions	59.2	$\kappa = 0.83$
Informal Support Networks	Extended family support	82.3	$\kappa = 0.79$
	Neighborhood-based networks	76.5	$\kappa = 0.79$
	Community elders	71.8	$\kappa = 0.79$
Collective Narratives	Shared meaning-making	68.9	$\kappa = 0.76$
	Cultural continuity	63.4	$\kappa = 0.76$
	Historical perspective framing	57.8	$\kappa = 0.76$

Table 7. Inter-Rater Reliability and Thematic Consistency Metrics.

Analytical Dimension	Statistic	Interpretation
Overall thematic agreement	ICC = 0.72	Substantial inter-coder reliability
Highest internal consistency	$\kappa = 0.83$	Collective ritual domain
Moderate-high consistency	$\kappa = 0.79$	Informal support networks
Conceptual narrative stability	$\kappa = 0.76$	Collective meaning construction

Note. Percentages indicate the proportion of studies reporting each resilience mechanism; κ and ICC values reflect inter-rater agreement across qualitative meta-synthesis coding and meet accepted thresholds for robust thematic reliability.

As observed in the sixth and seventh tables above. The results of the thematic meta-synthesis analysis within the Aleppo community reveal layered and consistent patterns of communal resilience, with substantial inter-rater coherence indicated by ICC = 0.72, demonstrating high conceptual stability; within the domain of collective rituals, the highest reliability was recorded with $\kappa = 0.83$, reflected in the prevalence of collective prayer at 78.4%, communal commemorations at 65.7%, and healing traditions at 59.2%, while informal support networks exhibited strong internal consistency with $\kappa = 0.79$, encompassing extended family support at 82.3%, neighborhood-based networks at 76.5%, and the role of community elders at 71.8%, and within collective narratives, consistency reached $\kappa = 0.76$, manifested through shared meaning-making at 68.9%, cultural continuity at 63.4%, and historical perspective framing at 57.8%, affirming that these resilience mechanisms not only reinforce social cohesion and cultural continuity but also constitute a protective foundation against intergenerational traumatic effects, demonstrating that collective practices, informal support networks, and shared meaning construction systematically contribute to the adaptive capacity of the community in confronting the long-term psychological consequences of armed conflict, while simultaneously providing a strong empirical basis for interventions that respect and integrate local cultural values.

Protective and Risk Factors

Table 8. Intergenerational Trauma Transmission Pathways and Behavioral Indicators.

Transmission Pathway	Structural Coefficient (β)	Significance (p)	Specific Manifestations	Prevalence (%)
Maladaptive Parenting	0.45	< .001	Overprotective parenting	57.3
			Emotional unavailability	48.9
			Inconsistent discipline	42.7
Dysfunctional Communication	0.38	< .001	Silence about trauma	63.2
			Indirect communication	51.4
Anxiety Modeling	0.41	< .001	Emotional suppression	44.8
			Hypervigilance	58.6
			Avoidance behavior	52.3
			Emotional dysregulation	47.9

Table 9. Moderating, Protective, and Risk Factors in Intergenerational Trauma Transmission.

Factor Category	Variable	Effect Size	Precision Metric	Significance (p)
Moderator	Child's age at exposure	$r = 0.38$	CI 95%: 0.34 to 0.42	< .001
	Attachment quality	$r = 0.45$	CI 95%: 0.41 to 0.49	< .001
	Social support	$r = -0.52$	CI 95%: -0.56 to -0.48	< .001
	Communal resilience	$r = -0.47$	CI 95%: -0.51 to -0.43	< .001
Protective	Spiritual practices	$\beta = 0.43$	SE = 0.06	< .001
	Family cohesion	$\beta = 0.38$	SE = 0.05	< .001
	Community support	$\beta = 0.35$	SE = 0.04	< .001
Risk	Social isolation	$\beta = 0.51$	SE = 0.07	< .001
	Poverty	$\beta = 0.47$	SE = 0.06	< .001
	Prolonged conflict exposure	$\beta = 0.44$	SE = 0.05	< .001

Note. Effect sizes derive from structural equation modeling, multilevel regression, and hierarchical regression analyses across 47 studies spanning 13 years of conflict exposure. All estimates indicate robust statistical significance and conceptual coherence within an intergenerational trauma framework.

As observed in the eighth and ninth tables above. The results of the integrative analysis of the meta-analysis covering 13 years of conflict in Aleppo reveal complex mechanisms of intergenerational trauma transmission, in which maladaptive parenting shows a structural coefficient of $\beta = 0.45$ ($p < .001$), manifested through overprotective parenting at 57.3%, emotional unavailability at 48.9%, and inconsistent discipline at 42.7%, while dysfunctional communication demonstrates $\beta = 0.38$ ($p < .001$) through silence about trauma at 63.2%, indirect communication at 51.4%, and emotional suppression at 44.8%, and anxiety modeling records $\beta = 0.41$ ($p < .001$), reflected in hypervigilance at 58.6%, avoidance behavior at 52.3%, and emotional dysregulation at 47.9%; moderating factors that increase the risk of transmission include the child's age at exposure with $r = 0.38$ (CI 95% = 0.34-0.42) and attachment quality

with $r = 0.45$ (CI 95% = 0.41-0.49), while significant protective factors consist of social support $r = -0.52$ (CI 95% = -0.56--0.48), communal resilience $r = -0.47$ (CI 95% = -0.51--0.43), spiritual practices $\beta = 0.43$ (SE = 0.06), family cohesion $\beta = 0.38$ (SE = 0.05), and community support $\beta = 0.35$ (SE = 0.04), whereas risk factors include social isolation $\beta = 0.51$ (SE = 0.07), poverty $\beta = 0.47$ (SE = 0.06), and prolonged conflict exposure $\beta = 0.44$ (SE = 0.05), indicating that although second-generation children bear the psychological burden of parental trauma, the presence of protective practices and strong social networks systematically mitigates symptom intensity, while adverse socioeconomic conditions and sustained conflict exposure amplify transmission, thereby affirming a dynamic interaction between behavioral mechanisms, communication patterns, anxiety modeling, and risk and protective factors in shaping intergenerational psychopathology trajectories.

Intervention Effectiveness

Table 10. Effectiveness of Intervention Approaches in Intergenerational Trauma (Meta-analysis, $n = 18$).

Intervention Approach	Effect Size (d)	95% Confidence Interval
Community-based interventions	0.82	0.76 to 0.88
Trauma-focused CBT	0.75	0.69 to 0.81
Narrative Exposure Therapy	0.68	0.62 to 0.74
Family Systems interventions	0.63	0.57 to 0.69

Note: Between-study heterogeneity was moderate ($I^2 = 64.3\%$, $Q = 127.8$, $p < .001$). Egger's test indicated no statistically significant publication bias ($t = 1.84$, $p = .07$).

Table 11. Temporal Trends in Trauma Severity Across Conflict Periods.

Conflict Period	First Generation Mean \pm SD	Second Generation Mean \pm SD
2011–2014	3.2 \pm 0.8	2.1 \pm 0.6
2015–2018	3.8 \pm 0.9	2.6 \pm 0.7
2019–2022	4.3 \pm 1.0	3.1 \pm 0.8
2023–2024	4.7 \pm 1.1	3.5 \pm 0.9

Note: Temporal sensitivity analysis demonstrates a progressive increase in trauma severity in both generations, with consistently higher mean scores observed in the first generation.

As observed in the tenth and eleventh tables above. The results of the meta-analysis of interventions addressing intergenerational trauma in the Aleppo community reveal differential effectiveness across approaches, with community-based interventions achieving the highest effect size of 0.82 (CI 95% = 0.76-0.88), followed by trauma-focused CBT at 0.75 (CI 0.69-0.81), Narrative Exposure Therapy at 0.68 (CI 0.62-0.74), and Family Systems interventions at 0.63 (CI 0.57-0.69). In comparison, between-study heterogeneity is moderate ($I^2 = 64.3\%$, $Q = 127.8$, $p < .001$), and Egger's test ($t = 1.84$, $p = 0.07$) indicates no statistically significant publication bias. Temporal trends in trauma severity demonstrate a progressive increase over the 13 years of conflict, with the first generation exhibiting a mean score of 3.2

± 0.8 in the 2011-2014 period that rose to 4.7 ± 1.1 in 2023-2024, while the second generation increased from 2.1 ± 0.6 to 3.5 ± 0.9 over the same interval, underscoring that although interventions are effective, the overall trauma burden continues to escalate with prolonged conflict duration, revealing differential symptom persistence between first and second generations and emphasizing the need for adaptive approaches that take into account community context and the cumulative nature of long-term trauma exposure.

Regional Moderation Analysis

Table 12. Regional Moderation in Intergenerational Trauma Transmission in Aleppo.

Region of Aleppo	Communal Resilience Mean	Standard Deviation	Conflict Intensity	Dominant Protective Mechanisms
Eastern Aleppo	4.2	0.8	Comparable	Traditional support systems, collective rituals
Western Aleppo	3.6	0.9	Comparable	Weaker traditional networks, reduced ritual continuity

Note. Regional variation indicates that stronger preservation of traditional support structures and collective ritual practices is associated with higher communal resilience, despite similar levels of conflict exposure.

As observed in the twelfth table above. The results of the regional moderation analysis of intergenerational trauma transmission in Aleppo reveal marked differences in levels of communal resilience between the eastern and western areas of the city, with the eastern region demonstrating a higher mean score of 4.2 (SD = 0.8) compared to 3.6 (SD = 0.9) in the western region, despite both areas having experienced relatively comparable intensities of conflict; this disparity is closely associated with the continuity of traditional support systems and stronger collective ritual practices in the east, which appear to facilitate community-level protective mechanisms, including the maintenance of informal social networks, engagement in collective rituals, and participation in shared narratives, whereas the western region exhibits limitations in the sustainability of traditional networks and ritual practices, with implications for a reduced adaptive capacity to buffer the psychological impacts of conflict, thereby underscoring that local context and the strength of cultural institutional structures play a significant role in moderating the effects of intergenerational trauma, while simultaneously indicating that community-based interventions and efforts to revitalize local traditions may constitute critical strategies for strengthening psychosocial resilience in the most vulnerable areas.

As a closing remark, the findings of this meta-analysis reveal the complexity of intergenerational trauma transmission within the Aleppo community over 13 years of conflict, in which PTSD prevalence reached 68.4% in the first generation and 42.3% in the second generation, major depression 55.7% and 37.2%, anxiety disorders 61.3% and 44.8%, and

psychosomatic disorders 47.2% and 31.5%, indicating a pattern of attenuation yet the persistence of a clinically significant burden in the second generation, while the primary transmission pathways involve maladaptive parenting ($\beta = 0.45$), dysfunctional communication ($\beta = 0.38$), and anxiety modeling ($\beta = 0.41$) with specific manifestations such as overprotective parenting 57.3%, silence about trauma 63.2%, and hypervigilance 58.6%, shaped by moderating factors including child age at exposure ($r = 0.38$), attachment quality ($r = 0.45$), social support ($r = -0.52$), and communal resilience ($r = -0.47$), whereas protective factors such as spiritual practices ($\beta = 0.43$), family cohesion ($\beta = 0.38$), and community support ($\beta = 0.35$) counterbalance risks arising from social isolation ($\beta = 0.51$), poverty ($\beta = 0.47$), and prolonged conflict exposure ($\beta = 0.44$), with communal resilience patterns involving collective prayer 78.4%, extended family support 82.3%, and shared meaning-making 68.9%, alongside the effectiveness of community-based interventions $d = 0.82$, TF-CBT $d = 0.75$, Narrative Exposure Therapy $d = 0.68$, and Family Systems interventions $d = 0.63$, while temporal analyses indicate a progressive increase in trauma severity in the first generation from 3.2 ± 0.8 to 4.7 ± 1.1 and in the second generation from 2.1 ± 0.6 to 3.5 ± 0.9 , and regional moderation demonstrates higher communal resilience in eastern Aleppo ($M = 4.2$, $SD = 0.8$) compared to the west ($M = 3.6$, $SD = 0.9$) in relation to the strength of traditional support systems and collective ritual practices, collectively affirming that although intergenerational trauma transmission is substantial, collective resilience mechanisms function as a critical buffer and form the foundation for effective and culturally informed interventions, offering strategic insights for long-term mitigation efforts.

Discussion

This discussion affirms that the transmission of intergenerational trauma in the context of protracted conflict in Aleppo constitutes a phenomenon far more complex than the linear explanatory frameworks that have dominated earlier literature. The meta-analysis of 47 studies spanning 2011–2024 not only confirms all research hypotheses but also reveals layered psychosocial, cultural, and communal mechanisms that operate simultaneously to shape cross-generational trauma experiences. These findings extend the understanding of intergenerational trauma beyond a merely dyadic parent–child relationship toward a broader and more dynamic social configuration.

The strong correlation between the severity of parental trauma and the manifestation of trauma in children ($r = 0.62$) empirically confirms the first hypothesis. It is consistent with the findings of Rowland-Klein & Dunlop (1998) in families of Holocaust survivors ($r = 0.58$), albeit with higher intensity in the Aleppo context. This difference can be explained by the

character of the conflict, which lacks a clear temporal endpoint, thereby creating conditions of ongoing traumatization that simultaneously expose both generations to threat, loss, and uncertainty. In such circumstances, trauma does not function as an inherited memory of the past, but rather as a lived experience that is continuously reproduced in the everyday life of families.

The identification of three principal pathways of trauma transmission, namely maladaptive parenting ($\beta = 0.45$), dysfunctional communication ($\beta = 0.38$), and anxiety modeling ($\beta = 0.41$), extends Danieli's (2020) theoretical model by demonstrating that trauma transmission occurs through a combination of explicit behavioral patterns and implicit emotional communication that becomes internalized within family relationships. The significance of the dysfunctional communication pathway supports the concept of a "conspiracy of silence" as articulated by Dansie (2021), yet in the Aleppo context, such silence is not merely a protective strategy, but rather a reflection of the symbolic limitations of families in processing trauma that remains ongoing.

The second hypothesis concerning the role of socio-cultural factors as moderators receives empirical support that even exceeds theoretical expectations. The Intraclass Correlation Coefficient value for communal resilience ($ICC = 0.72$) indicates a very high level of collective coherence in the coping mechanisms of the Aleppo community, far surpassing the findings of Morina et al. (2016) in the context of the Iraqi conflict ($ICC = 0.45$). This finding underscores the distinctiveness of Aleppo's social structure, in which kinship networks, neighborhood solidarity, and cultural practices form layers of psychological protection that buffer against the cross-generational impact of trauma.

The very strong protective effects of collective rituals and informal support networks ($\kappa = 0.83$ and $\kappa = 0.79$) extend Kheirallah et al.'s (2022) understanding of social support by demonstrating that specific cultural practices can serve as effective psychological buffers. The role of senior community figures involved in psychosocial recovery processes (71.8%) emerges as a crucial finding that has long been marginalized in the intergenerational trauma literature, while simultaneously challenging the dominant individualistic clinical approach in trauma interventions.

The significantly higher effectiveness of community-based interventions compared with conventional approaches ($d = 0.82$) confirms the third hypothesis and underscores the urgency of culturally sensitive approaches. This finding aligns with Rousseau's (1998) argument for culturally informed interventions, yet this meta-analysis provides stronger, more systematic empirical evidence of their superiority in the context of protracted conflict.

Theoretically, the findings of this study contribute to the development of intergenerational trauma Theory through three principal extensions. First, trauma transmission models must move beyond dyadic relationships and integrate the community as a collective mediator, as reflected in the concept of a communal buffer identified in this research. Second, the temporal analysis showing a progressive increase in trauma severity over the period 2011–2024 affirms the importance of the time dimension in understanding trauma transmission mechanisms. Third, the strong correlation between spiritual practices and resilience ($\beta = 0.43$) challenges secularist assumptions in mainstream trauma theory and affirms the relevance of the spiritual-cultural dimension within the conceptual framework of intergenerational trauma.

The practical implications of these findings demand a paradigm shift in interventions from an individual focus to community-based approaches that integrate existing communal support systems. Cultural adaptation of interventions becomes crucial, given the effectiveness of collective rituals and traditional healing practices in strengthening psychological resilience. Moreover, trauma transmission patterns involving more than one generation underscore the need for multigenerational intervention designs that simultaneously target parents, children, and the community as a single systemic unit.

Several methodological limitations nevertheless warrant careful consideration, including the dominance of self-report instruments, potential recall bias, variation in measurement tools, limitations in geographic access within Aleppo, and challenges in establishing causal relationships amid an ongoing conflict. Cultural and linguistic limitations, particularly in the use of Western-based assessment instruments, also constitute important considerations for future research.

Overall, this discussion affirms that intergenerational trauma in Aleppo is a multidimensional phenomenon that necessitates a paradigm shift in both understanding and intervention. The integration of cultural, spiritual, and communal resources with contemporary therapeutic approaches is not merely an alternative but rather an urgent necessity to break the chain of cross-generational trauma in the context of protracted conflict.

4. CONCLUSION

This meta-analysis presents a comprehensive synthesis of the dynamics of intergenerational trauma in the context of protracted conflict in Aleppo by integrating empirical evidence from 47 studies involving 12,873 participants over the 13 years 2011–2024. The principal findings affirm that chronic armed conflict not only generates a severe psychopathological burden among the generation directly exposed, with PTSD prevalence

reaching 68.4% in the first generation, but also produces substantial psychological effects on the subsequent generation, as reflected in a PTSD prevalence of 42.3% in the second generation. This pattern indicates that trauma in the Aleppo context operates as a cross-generational phenomenon that becomes structurally internalized within family and community life.

Further analysis reveals that trauma transmission occurs through an interwoven configuration of mechanisms, encompassing maladaptive parenting with a coefficient of $\beta = 0.45$, dysfunctional communication with $\beta = 0.38$, and anxiety modeling with $\beta = 0.41$. These three pathways constitute a conceptual framework that extends conventional understandings of intergenerational trauma transmission, while also demonstrating meaningful differences from findings in other conflict contexts as reported by Dansie (2021) and Morina et al. (2016). This distinctiveness lies primarily in the strong role of communal factors as mediators, which, in the Aleppo context, function not merely as a social backdrop but as active elements in both the transmission and mitigation of trauma.

This communal dimension is clearly reflected in the high level of collective resilience identified (Intraclass Correlation Coefficient of 0.72), as well as in the effectiveness of collective rituals and informal support networks, which demonstrate κ values of 0.83 and 0.79, respectively. These findings exceed the protective effects reported in numerous conflict studies in other regions, while simultaneously enriching the theoretical discourse on resilience in the context of collective trauma. Moreover, the superiority of community-based interventions, with an effect size of $d = 0.82$ compared with conventional approaches, underscores the importance of cultural congruence in addressing intergenerational trauma and challenges assumptions regarding the universality of standardized therapeutic models.

The contributions of this study include the extension of theoretical models of intergenerational trauma through the integration of community as a collective mediating factor, the provision of a temporal perspective grounded in longitudinal analysis over a 13-year period that is relatively rare in the literature, and the formulation of an evidence-based practical framework for the development of interventions rooted in local cultural contexts. The resulting recommendations emphasize the urgency of developing community-based intervention protocols that integrate traditional healing practices, implementing early screening and preventive strategies for both generations, strengthening existing community support networks, and developing culturally validated assessment instruments. In this way, the study not only deepens scientific understanding of intergenerational trauma in regions of protracted conflict but also offers realistic, culturally grounded practical pathways to disrupt the cycle of cross-

generational trauma by mobilizing cultural resources and communal strengths that have long been neglected.

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