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Title Page

Exposure to Community Violence and Aggression in Afghan Refugee Children: A Cross-Sectional Study of the Associations of Hostile Attribution of Intent and Normative Beliefs

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Abstract

Background: Afghan refugee children are frequently confronted with community violence, a significant threat to their psychological well-being. While exposure to violence is a known precursor to aggression, the specific cognitive and emotional mechanisms that explain this link within this vulnerable population remain underexplored.

Objective: This study investigates the impact of community violence exposure on reactive-proactive aggression among Afghan refugee adolescents. It specifically examines the associations of hostile attribution of intent, lack of guilt, and normative beliefs about aggression with this outcome.

Methods: A cross-sectional study was conducted with a sample of 300 Afghan refugee adolescents (190 boys, 110 girls; aged 14-18) residing in refugee camps in Khyber Pakhtunkhwa Pakistan. Data were collected using the 'Things I Have Seen and Heard' scale (community violence), the 'Reactive-Proactive Aggression Questionnaire', a scenario-based measure for hostile attribution, the 'Guilt and Shame Proneness Scale', and the 'Normative Belief About Aggression Scale'. Hierarchical (sequential) multiple regression was used to examine the associations among these variables; because the design was cross-sectional, no formal mediation was tested.

Findings: A significant positive correlation was found between community violence exposure and reactive-proactive aggression. Community violence exposure was significantly and positively associated with aggression. Hostile attribution of intent was independently associated with aggression after accounting for community violence exposure. Normative beliefs about

aggression were similarly associated with aggression. However, lack of guilt was not significantly associated with aggression in this sample.

Conclusions: The findings highlight a complex interplay between environmental stressors like community violence and the development of social cognitions in displaced adolescents. The link between violence exposure and aggression is explained, in part, by the tendency to interpret others' actions as hostile and the adoption of beliefs that aggression is an acceptable behavior.

Clinical implications: The results underscore the need for targeted interventions within refugee communities. These programs should not only address trauma from violence exposure but also focus on modifying maladaptive social cognitions to reduce aggression and foster mental health resilience among refugee youth.

Key Messages

- **What is already known on this topic:** Exposure to community violence is a well-established risk factor for the development of aggressive behavior in children and adolescents. However, there is limited research on the specific cognitive-emotional pathways that explain this link in uniquely vulnerable populations, such as Afghan refugee children who face prolonged displacement and adversity.
- **What this study adds**: This study confirms that for Afghan refugee adolescents, exposure to community violence is strongly associated with aggression. It newly demonstrates that aggression is independently associated with two distinct cognitive factors, after accounting for exposure: a hostile attribution bias and the adoption of

normative beliefs that legitimize aggression as an acceptable response. Notably, a lack of guilt was not significantly associated with aggression in this population.

- **How this study might affect research, practice or policy:** These findings suggest that to be effective, mental health interventions for refugee youth must go beyond trauma-focused care to include components that specifically target and aim to restructure maladaptive social cognitions. Policies supporting refugee communities should fund programs that build adaptive social skills, challenge beliefs justifying violence, and promote mental resilience to mitigate the long-term effects of violence exposure.

Keywords

community violence, aggression, Afghan refugees, hostile attribution, normative beliefs, guilt, cross-sectional study, social cognition, adolescent mental health

List of abbreviations

CVE: Community violence exposure

RPQ: Reactive-Proactive Aggression Questionnaire

GASP: Guilt and Shame Proneness Scale

NOBAGS: Normative Belief About Aggression Scale

SES: Socioeconomic Status

ASRB: Advanced Study Review Board

Background

Exposure to community violence (CVE) is the experience of witnessing or hearing about violent behaviors that occur outside the home. This chronic exposure is a pervasive and toxic stressor that poses a significant threat to psychological well-being, particularly for children and adolescents (1). For decades, Afghan refugee children residing in Pakistan have been confronted with this reality (2). The challenges of displacement are compounded by immersion in communities where violence is prevalent, and the constant exposure to poverty and resource scarcity exacerbates their tendency to externalize emotions, often resulting in aggressive actions. Studies conducted in Afghanistan have confirmed high rates of violence against children, stemming from the long-term effects of conflict, inadequate education, and poverty (3, 4, 5).

Aggression, broadly defined as any behavior intended to harm another individual, is a common and concerning outcome of violence exposure (6). The distinction between reactive aggression (an impulsive, "hot-blooded," anger-driven response to a perceived threat) and proactive aggression (a "cold-blooded," calculated, instrumental act to achieve a goal) is crucial for understanding its origins and functions (7). Reactive aggression is often associated with deficits in social information processing and emotional dysregulation, while proactive aggression is linked to the belief that aggression yields positive outcomes, a concept rooted in social learning (8, 9). Although these two forms have different antecedents, they frequently co-occur (10).

Several influential theories provide a framework for understanding how CVE might translate into aggressive behavior. The Frustration-Aggression Hypothesis, first proposed by Dollard et al. (11), posits that aggression is a direct result of frustration. Though criticized for its rigidity, Berkowitz later reformulated the theory, suggesting that frustration creates a readiness for

aggression, which is then triggered by situational cues (12). This framework is particularly relevant for understanding reactive aggression.

Expanding on this, Berkowitz's Cognitive Neoassociation Model suggests that any aversive event, including witnessing violence, triggers a network of negative thoughts, feelings, and memories that activate "fight" (aggression-related) and "flight" (escape-related) tendencies (13).

Perhaps the most comprehensive model is Bandura's Social Learning Theory, which argues that aggression is primarily learned through observation, imitation, and reinforcement (14). According to this theory, children acquire aggressive scripts by watching family members, peers, and media figures. When these observed aggressive behaviors are rewarded, the child learns that aggression is an acceptable and effective strategy. This theory is foundational for understanding the development of both proactive aggression and the normative beliefs that justify it.

Finally, the General Aggression Model (GAM) integrates these concepts, proposing that aggression stems from an interaction between individual factors (e.g., personality traits, beliefs) and situational factors (e.g., provocation, violent cues from weapons or media) (15, 16). These inputs influence an individual's internal state—affect, cognition, and arousal—which in turn determines their behavioral response.

This study was designed to investigate three specific cognitive and emotional variables that may help account for this association.

1. **Hostile Attribution Bias (HAB):** Based on the Social Information Processing model, HAB is the tendency to interpret others' ambiguous actions as intentionally hostile (17). Children in violent environments may develop this bias as a protective mechanism.

2. **Lack of Guilt:** Guilt is a crucial moral emotion that promotes prosocial behavior and inhibits harm (18). A lack of guilt is a diagnostic feature of conduct disorder and is linked to antisocial behaviors (19, 20). It is hypothesized that desensitization to violence may erode a child's capacity for guilt.
3. **Normative Beliefs about Aggression:** As explained by Social Learning Theory, these are an individual's personal standards regarding the acceptability of aggression (21). Children who believe aggression is "okay" or normal are more likely to use it. Exposure to community violence can teach children that aggression is a common and justifiable response to conflict (22).

Objectives: The primary objective of this study was to examine the relationship between exposure to community violence and reactive-proactive aggression in Afghan refugee children. A secondary objective was to examine the associations of hostile attribution of intent, lack of guilt, and normative beliefs with aggression, in line with the study's pre-specified hypotheses.

Methods

Study Design: A cross-sectional, quantitative design was employed to collect data at a single point in time.

Ethical Approval: This study was approved by the Institutional Review of Shaheed Benazir Bhutto Women University Peshawar. All methods were performed in accordance with the relevant guidelines and regulations. All procedures involving human participants were carried out in accordance with the ethical standards of the Declaration of Helsinki. Written informed

consent was obtained from all participants and their legal guardians prior to their inclusion in the study.

Setting: The study was conducted in seven Afghan refugee camps located in the districts of Peshawar, Charsadda and Kohat, Khyber Pakhtunkhwa, Pakistan. The selected camps included Khazana camp, Utmanzo camp Kababyan camp, Munda camp, Badabera camp, Haji Zai camp, and Kohat camp. The study was designed to assess community violence in refugee settings; therefore, we purposively sampled camps with documented higher rates of such events. The Commissionerate for Afghan Refugees (CAR) in Khyber Pakhtunkhwa provided the official incident records used for selection. Applying consistent, predetermined criteria for violent incidents (encompassing physical fights, theft, assaults, armed conflict, and fatal cases), we identified and included all seven camps that met these inclusion criteria. Data collection took place between March to June 2023.

Participants: The study included 300 Afghan refugee adolescents. Eligibility criteria were: (a) being an Afghan refugee residing in the selected camps, (b) being between the ages of 14 and 18, and (c) holding a Proof of Registration (PoR) card, (d) being able to read and write at a basic level and mentally capable of participating, and (e) having no diagnosed physical disability or psychological disorder. Participants were selected using a purposive sampling technique, where camps with known high rates of violence were targeted to ensure the sample had relevant exposure to the phenomena under investigation. Recruitment followed a purposive approach. Prior to data collection, and after obtaining the necessary approvals from the Commissionerate for Afghan Refugees and the district administration, the researcher contacted community mobilisers and camp leaders. With the assistance of community teachers, mentors and social

mobilisers, eligible adolescents were invited to a designated location within each camp. Recruitment continued across the seven camps until the target sample of 300 participants was reached. Because camp populations differed in size, equal recruitment across camps was not an objective and camp-specific counts were not recorded. Participation was entirely voluntary, and no financial or material incentives were offered. The questionnaire was administered on paper and was primarily self-completed; where a participant had difficulty reading, the researcher read the items aloud and recorded the response the participant selected, without interpretation. Completion took approximately 10 to 20 minutes.

Variables and Measurement: All variables were assessed using validated self-report questionnaires. The instruments were translated from English into Afghan Pashto and independently back-translated into English by bilingual experts, including a PhD scholar from the Department of Pashto, University of Peshawar. The original and back-translated versions were compared and any discrepancies reconciled, to preserve the conceptual meaning of the items while ensuring that the wording was culturally appropriate and readily understood by Afghan refugee adolescents. A demographic questionnaire recorded participants' age, gender, educational level, nationality, financial status, history of substance use, and self-reported mental health; these variables were used to describe the sample.

- **Community Violence Exposure (Exposure):** Measured using *Things I Have Seen and Heard* (23). This 20-item scale assesses children's and adolescents' exposure to violence, as witnesses or victims, within the home and the wider community. Items are rated on a five-point frequency scale (0 = never to 4 = four or more times), and a total score was calculated by summing all items, with higher scores indicating greater exposure (potential

range 0 to 80). Example items include hearing gunshots, seeing someone being chased or physically assaulted, and witnessing an arrest. In the present sample the internal consistency was acceptable (Cronbach's alpha = .71).

- **Reactive-Proactive Aggression (Outcome):** Measured with the 23-item *Reactive-Proactive Aggression Questionnaire* (RPQ) (24). Each item is rated on a three-point scale (0 = never, 1 = sometimes, 2 = often). It contains an 11-item reactive aggression subscale and a 12-item proactive aggression subscale, which are frequently combined because the two forms commonly co-occur. For the present analysis a total aggression score was calculated by summing all 23 items (Cronbach's alpha = .75); analysing the total score rather than the two subscales separately is acknowledged as a limitation.
- **Hostile Attribution of Intent:** Assessed using a single, validated story scenario from Milich and Dodge (25). Participants imagined an ambiguous provocation (for example, a peer bumping into them and causing them to fall) and were asked why the other child had acted as they did. The response was coded as a binary (categorical) variable (0 = it was an accident; 1 = he or she wanted to hurt you deliberately) and entered into the regression models accordingly.
- **Lack of Guilt:** Measured using 8 items from two subscales of the *Guilt and Shame Proneness Scale* (GASP) (26). The two guilt subscales, Guilt-Negative-Behaviour-Evaluation and Guilt-Repair (eight items in total), index the tendency to experience guilt following personal transgressions. Items were rated on a five-point response scale (from very unlikely to very likely); this differs from the standard seven-point GASP format and reflects the version administered in this study. Lack of guilt was operationalised as low guilt proneness on these subscales, such that lower scores denote a weaker tendency to

experience guilt. In the present sample the internal consistency was modest (Cronbach's alpha = .62).

- **Normative Beliefs about Aggression:** Measured using the 20-item *Normative Belief About Aggression Scale* (NOBAGS) (27). The scale measures the extent to which aggressive behaviour is perceived as acceptable across situations, and comprises subscales assessing general approval of aggression, approval of retaliation, and attitudes towards aggression. Items were rated on a four-point scale (1 = it is really wrong to 4 = it is perfectly OK), with reverse-worded items recoded before scoring so that higher total scores indicate greater acceptance of aggression. In the present sample the internal consistency was good (Cronbach's alpha = .85).

Sample Size: The study included a sample of 300 participants. While an a priori power analysis was not conducted, a post-hoc sensitivity analysis was performed using G*Power 3.1 to determine the statistical power of our analyses. For the hierarchical multiple regression models with up to three predictors, the analysis revealed that a sample size of 300 was sufficient to detect a small-to-medium effect size of $f^2 = 0.035$ or greater, with 80% power at a significance level of $\alpha = .05$. The significant associations observed in our study exceeded this threshold, suggesting the sample size was adequate for detecting the reported relationships. Furthermore, the sample size of 300 was sufficient to achieve adequate precision for our key estimates. For example, the 95% confidence interval for the primary predictor, community violence, on aggression was relatively narrow. This indicates that our estimate of the effect is reasonably precise, supporting the adequacy of the sample size for the purposes of this study.

To reduce measurement bias, all instruments were translated in to local language. To mitigate selection and non-response bias, local community mobilizers facilitated data collection. To reduce social desirability bias, participants were assured of confidentiality and privacy.

Statistical Methods: Data were analysed using IBM SPSS Statistics version 22 (IBM Corp., Armonk, NY). Community violence exposure, reactive-proactive aggression, lack of guilt and normative beliefs about aggression were treated as continuous variables, and hostile attribution of intent as a binary categorical variable. Hierarchical (sequential) multiple regression analyses were conducted, entering community violence exposure in a first block and each cognitive or emotional variable in a second block, to examine their associations with aggression. Because the study used a cross-sectional design, the temporal ordering of the variables could not be established; accordingly, no formal mediation (indirect-effect) analysis was undertaken, and all relationships are interpreted as associations rather than as causal or mediating pathways. The analytical strategy was focused on the primary objective: to examine these associations in the sample as a whole. No other analyses, such as subgroup comparisons or sensitivity analyses, were conducted for several reasons. First, as a foundational study, the primary scope was to establish the main theoretical relationships rather than explore all potential moderators. Second, from a statistical standpoint, conducting subgroup analyses would have required splitting the sample, thereby reducing statistical power. Given the unequal group sizes for gender (190 boys and 110 girls), comparisons may have been underpowered, particularly for the smaller group, limiting the reliability of such findings. Therefore, to maintain the statistical integrity of the primary results, the analysis was restricted to the full sample. These potential subgroup differences remain a critical and recommended direction for future research with larger, stratified samples.

Results

This section presents the demographic characteristics of the sample, the psychometric properties of the study instruments, and the results of the analyses, comprising descriptive statistics, correlations, and hierarchical (sequential) regression analyses.

Sample Characteristics

The study comprised a sample of 300 Afghan refugee adolescents. The demographic breakdown of the participants as summarized below to characterize the study population (Table 1).

Gender and Age Distribution: The sample was composed of 190 boys (63.3%) and 110 girls (36.7%), indicating a higher representation of male participants. The participants' ages ranged from 14 to 18 years. The distribution across age groups was relatively varied: 76 participants (25.3%) were 14 years old, 64 (21.3%) were 15, 37 (12.3%) were 16, 55 (18.3%) were 17, and 68 (22.7%) were 18 years old. This age spread ensures that the findings capture experiences across mid-to-late adolescence.

Educational and Socio-Economic Status: In terms of educational attainment, the sample was almost evenly split, with 159 participants (53.0%) enrolled in primary education and 141 (47.0%) in secondary education. Regarding socio-economic status (SES), the majority of participants came from lower (47.7%, n=143) or middle (46.3%, n=139) socioeconomic backgrounds. A small proportion, 18 participants (6.0%), reported belonging to an upper socio-

economic class. This distribution is consistent with the typical profile of a refugee population, which often faces significant economic challenges.

Psychological Characteristics: Critically, the sample was largely composed of adolescents who did not report significant psychological or substance abuse issues. Only 12 participants (4.0%) reported having a psychological disorder, and only 9 (3.0%) reported a drug addiction. The vast majority (96.0% and 97.0%, respectively) reported no such conditions. This is an important contextual factor, as it suggests that the aggression and cognitive variables measured are more likely linked to the experiential factors under investigation (e.g., community violence) rather than pre-existing, clinically diagnosed conditions.

Table 1

Demographic Characteristics of the Sample (N = 300)

Characteristic	N	%
Gender		
Girls	110	36.7
Boys	190	63.3
Age (years)		
14	76	25.3
15	64	21.3
16	37	12.3
17	55	18.3
18	68	22.7
Education		
Primary	159	53.0
Secondary	141	47.0

Socio-economic status		
Lower	143	47.7
Middle	139	46.3
Upper	18	6.0
Psychological disorder		
Yes	12	4.0
No	288	96.0
Substance use		
Yes	9	3.0
No	291	97.0

Note. N = 300. Percentages are of the total sample.

Psychometric Properties and Descriptive Statistics

Prior to testing the main hypotheses, the psychometric properties of the key study variables were examined. The internal consistency reliability (Cronbach's Alpha), means, standard deviations, and distributional properties are presented below:

The Community Violence scale demonstrated acceptable internal reliability (α = .711). Participants reported a mean exposure score of 29.58 (SD = 10.25) with a potential range of 0 to 80 (observed range 0 to 64), indicating a moderate level of exposure to violent events in their communities.

The dependent variable, Reactive-Proactive Aggression, also showed acceptable reliability (α = .753). The mean score was 17.22 (SD = 6.19) with a potential range of 0 to 46 (observed range 4 to 37), suggesting a moderate baseline level of aggressive tendencies in the sample.

For the proposed cognitive and emotional variables, the results were mixed. The Normative Beliefs about Aggression (NOBAGS) scale exhibited good internal consistency ($\alpha = .85$), with a mean of 46.90 (SD = 9.53). The Lack of Guilt scale demonstrated marginally acceptable reliability ($\alpha = .619$), with a mean of 30.58 (SD = 4.85). Hostile Attribution was measured by a single item, precluding the calculation of internal consistency, and had a mean of 0.64 (SD = 0.48). The skewness and kurtosis values for all scales fell within an acceptable range, indicating that the data approximated a normal distribution and were suitable for parametric analyses.

Hypothesis Testing: Direct and Multivariable Associations

The Direct Impact of Community Violence on Aggression

The first hypothesis (H1) postulated that community violence would be a significant positive predictor of reactive-proactive aggression. A Pearson correlation analysis revealed a significant, positive relationship between the two variables ($r = .431$, $p < .01$), providing initial support for H1.

To further investigate this relationship, a simple linear regression was conducted (**Table 1.1**). The model was statistically significant, $F(1, 298) = 67.8$, $p < .001$, and explained 18.5% of the variance in reactive-proactive aggression ($R^2 = .185$). Community violence was a significant positive predictor ($\beta = .431$, $p < .001$), indicating that for every unit increase in exposure to community violence, levels of aggression increased by .431 standard deviations. This finding strongly supports the first hypothesis, confirming that higher exposure to community violence is directly associated with increased aggression among Afghan refugee adolescents.

Table 1.1

Regression Coefficients of Community Violence on Reactive Proactive Aggression,

Variables	R^2	*B*	*B*	*SE*	*95%CI*	
					LL	*UL*
Constant	.18	9.5		.99	7.58	11.47
Community violence		.26***	.43	.032	.198	.322

Notes: CI (Confidence Interval), LL (Lower Limit), UL (Upper Limit)

Associations between Community Violence and the Cognitive and Emotional Variables

We first examined whether community violence was associated with each of the proposed cognitive and emotional variables.

- **Lack of Guilt:** A regression analysis (**Table 1.2**) showed that community violence was not a significant predictor of a lack of guilt (β = -.03, p = .67). The model was non-significant, F(1, 298) = .180, p = .67, and accounted for virtually none of the variance (R^2 = .001). This indicates that lack of guilt was not associated with community violence exposure in this sample.

Table 1.2

Regression Coefficients of Community Violence on Lack of Guilt

Variables	R^2	B	B	SE	95%C I	
					LL	UL
Constant	.001	30.92		.86	29.23	32.61
Community violence		-.012	-.03	.03	-.07	.04

Notes: CI (Confidence Interval), LL (Lower Limit), UL (Upper Limit)

- **Hostile Attribution:** In contrast, community violence was a significant positive predictor of hostile attribution (**Table 1.3**). The model was significant, F(1, 298) = 8.158, p = .005, and explained 2.7% of the variance in hostile attribution (R^2 = .027). The standardized coefficient was positive and significant (β = .163, p = .005), indicating that greater exposure to violence was associated with a stronger tendency to attribute hostile intent to others' actions.

Table 1.3

Regression Coefficients of Community Violence on Hostile attributes of intent

Variables	R^2	B	β	SE	95%C I

					LL	***UL***
Constant	.027	.42		.084	.253	.582
Community violence		.008*	.163	.003	.002	.013

Notes: CI (Confidence Interval), UL (Upper Limit), LL (Lower Limit).

- **Normative Beliefs about Aggression:** A separate bivariate regression of community violence on normative beliefs was not conducted; the multivariable model in **Table 3** reports the association of normative beliefs with aggression after accounting for community violence exposure.

Table 2

Associations of Community Violence and Normative Beliefs with Reactive/Proactive Aggression (Hierarchical/Sequential Regression)

	Variable	***B***	**95%CI**		***SE B***	**β**	R^2	ΔR^2
			LL	***UL***				
Step 1							0.185	0.185***
	Constant	9.52	7.58	11.47	0.988			

	Community Violence	0.26	0.19	0.32	0.032	0.431***		
Step 2							0.215	0.03
	Constant	8.5	5.84	10.05	1.069			
	Community Violence	0.22	0.16	0.29	0.033	0.368***		
	Normative Beliefs	.11	0.49	0.174	0.32	.190***		

Note: SE (Standard Error), Cl (Confidence Interval), LL (Lower Limit), UL (Upper Limit), NB (Normative Belief), n = 300 Adolescents

Multivariable Associations

A series of hierarchical (sequential) regression analyses examined the associations of hostile attribution and normative beliefs with aggression, each after accounting for community violence exposure. Lack of guilt was not examined further, given its non-significant association above.

1. Community Violence, Hostile Attribution and Aggression

The analysis for hostile attribution is presented in (Table 3). In Step 1, community violence alone significantly predicted aggression ($\beta = .431$, $p < .001$), with $R^2 = .185$. In Step 2, hostile attribution was added to the model. The overall model remained significant, and the inclusion of hostile attribution led to a small but statistically significant increase in the explained variance ($\Delta R^2 = .013$, $p < .05$). Hostile attribution itself was a significant predictor of aggression ($\beta = .114$, $p < .05$). Crucially, the beta coefficient for community violence decreased from $\beta = .431$ to

β = .412 when hostile attribution was controlled for. Hostile attribution of intent was therefore independently associated with reactive-proactive aggression after accounting for community violence exposure. This is consistent with the possibility that exposure to community violence is associated with a cognitive bias in which ambiguous social cues are interpreted as hostile, which is in turn associated with an aggressive response.

Table 3

Associations of Community Violence and Hostile Attribution with Reactive/Proactive Aggression (Hierarchical/Sequential Regression)

	Variable	*B*	95%CI		*SE B*	β	R^2	ΔR^2
			LL	*UL*				
Step 1							0.185	0.185***
	Constant	9.525	7.580	11.470	0.988			
	Community Violence	0.26	0.198	0.322	0.032	0.431***		
Step 2							0.198	0.013*
	Constant	8.912	6.901	10.924	1.022			
	Community Violence	0.249	0.186	0.312	0.032	0.412***		
	Hostile Attribution	1.468	0.134	2.802	0.678	0.114*		

Note: Dependent Variable: Reactive Proactive Aggression, Predictor: Community Violence, Mediator: Hostile Attributes, n= 300 Adolescents, LL(Lower Limit), UL(Upper Limit)

2. Community Violence, Normative Beliefs and Aggression

The analysis for normative beliefs is presented in (**Table 2).** The pattern of results was similar, and the association was stronger. In Step 1, community violence was a significant predictor (β = .431, $p < .001$, $R^2 = .185$). When normative beliefs were added in Step 2, the change in R^2 was .032 ($p = .001$), indicating that normative beliefs explained a significant additional portion of the variance in aggression. In this final model, both community violence (β = .368, $p < .001$) and normative beliefs (β = .190, $p = .001$) were significant independent predictors. The reduction in the standardized coefficient for community violence (from .431 to .368) indicates that normative beliefs accounted for additional variance in aggression. This suggests that exposure to community violence is associated with beliefs that aggression is a normal and acceptable way to resolve conflict, which are themselves associated with aggressive behavior.

3. The Non-Significant Role of Lack of Guilt

As foreshadowed by the initial regression, the analysis for lack of guilt (**Table 4**) confirmed its non-significance. Adding lack of guilt to the model containing community violence resulted in a negligible and non-significant change in R^2 ($\Delta R^2 = .002$). The lack of guilt was not a significant predictor of aggression (β = -.035, $p = .505$), and the effect of community violence remained virtually unchanged. Lack of guilt was therefore not associated with aggression in this sample. This suggests that the correlates of aggression in this sample were more cognitive (interpretations and beliefs) than affective (the suppression of moral emotions such as guilt).

In summary, the statistical analyses yielded clear and differentiated results. The central finding is that exposure to community violence is a significant direct predictor of reactive-proactive aggression among Afghan refugee adolescents. Furthermore, aggression was also associated with two distinct cognitive variables. Both hostile attribution of intent and normative beliefs about aggression were independently associated with aggression after accounting for community violence exposure. In contrast, the proposed emotional mechanism of a lack of guilt was not supported by the data. These results are consistent with a pattern in which exposure to violence is associated with aggressive behavior both directly and through social cognition, whereby individuals may perceive the world as more threatening and view aggression as a normative, justified response.

Table 4

Associations of Community Violence and Lack of Guilt with Reactive/Proactive Aggression (Hierarchical/Sequential Regression)

	Variable	***B***	**95%CI**		***SE B***	**β**	***R^2***	**ΔR^2**
			LL	***UL***				
Step 1							0.185	0.185***
	Constant	9.525	7.580	11.470	0.988			
	Community Violence	0.26	0.198	0.322	0.032	0.431***		
Step 2							0.187	0.002

Constant	10.906	6.395	15.417	2.292	
Community Violence	0.260	0.197	0.322	0.032	0.430***
Lack of Guilt	-0.45	-0.176	0.087	0.67	-0.035

Note. Dependent Variable: Reactive Proactive Aggression, Predictor: Community Violence, Mediator: Lack of Guilt, n = 300 Adolescents, LL (Lower Limit), UL(Upper Limit)

Discussion

This study confirms a strong link between community violence exposure (CVE) and aggression among Afghan refugee adolescents. Crucially, it identifies two key cognitive factors that are associated with this relationship: the development of a hostile attribution bias and the adoption of normative beliefs that legitimize aggression. Conversely, a lack of guilt was not significantly associated with aggression in this context.

The confirmation of a strong, positive relationship between CVE and aggression aligns with a vast body of literature (28, 29, 30). Studies by Chaux et al. (31) and recent work by Li et al. (32) similarly found that youth in high-violence environments exhibit increased aggression. This finding underscores that for Afghan refugee adolescents, adverse conditions within their host communities manifested by displacement, poverty, and chronic exposure to violence serve as potent drivers of maladaptive behaviors. The stress of displacement and the strain of difficult life events have previously been linked to both reactive and proactive aggression (33). These findings are consistent with earlier research (34, 35, 36, 37, 38) demonstrating that exposure to violence in one's immediate environment predicts elevated aggression in children and adolescents.

The association involving hostile attribution bias is consistent with the Social Information Processing (SIP) model (39). Living in a violent community effectively serves as a "training ground" for heightened threat perception, shaping adolescents' tendency to interpret ambiguous social cues as hostile. This misinterpretation fosters reactive aggression as a defensive response to perceived threats. Schwartz and Proctor (38) similarly reported that hostile attribution biases were involved in the link between violence exposure and aggression, a finding consistent with the associations observed here. Among Afghan refugee adolescents, who have endured displacement and environmental instability, such biases may be adaptive in the short term, offering psychological protection in uncertain contexts. However, over time, this hyper vigilance becomes maladaptive, normalizing aggression as an acceptable or necessary form of self-protection.

Similarly, the association involving normative beliefs supporting aggression illustrates the core principles of Social Learning Theory (40). When adolescents are repeatedly exposed to violence as a routine feature of their community, aggressive behavior may become normalized and even valorized as a means of resolving conflict or asserting control. This social modeling effect aligns with Huesmann and Guerra's foundational research (21), as well as Slaby and Guerra (41), both of whom emphasized that when aggression is frequently observed and reinforced, individuals internalize it as a legitimate behavioral strategy. In this context, aggression becomes not only a reaction to external threats but also a learned and socially endorsed behavior. For Afghan refugee adolescents, many of whom live in overcrowded camps or marginalized urban settlements, such learning environments perpetuate a belief that aggression is a viable and effective response to interpersonal or situational conflict.

The absence of an association with guilt presents an intriguing and culturally nuanced deviation from expectations. While some Western studies have found guilt to buffer against aggression (42, 43), our findings revealed no such association. The experience and expression of guilt are deeply embedded in cultural and social norms. In collectivist societies such as Afghan culture, moral regulation often centers on social shame and communal harmony rather than individual guilt. Consequently, guilt may not serve as an internalized deterrent to aggression in the same way it does in Western individualistic contexts. Moreover, some studies suggest that individuals with higher guilt proneness can experience greater vulnerability to peer victimization or social withdrawal (44), complicating the assumed inverse relationship between guilt and aggression. Thus, the null mediation finding may reflect both cultural differences in moral socialization and the psychological consequences of prolonged exposure to conflict and displacement, where emotional regulation mechanisms are disrupted.

Beyond these associations, the broader relationship between community violence and aggression observed in this study aligns with extensive longitudinal evidence linking violent environments to psychological distress and behavioral maladjustment (45, 46, 47, 35). Specifically, reactive aggression has been associated with emotional dysregulation and anger in response to perceived threat, while proactive aggression is more goal-directed and instrumental. Both forms appear elevated in contexts of chronic adversity such as refugee camps where adolescents face constant threats to safety, limited resources, and minimal social support. This pattern underscores how structural and psychosocial stressors converge to amplify aggressive behaviors among displaced youth.

Importantly, the study's focus on witnessing community violence, rather than direct victimization, highlights a critical dimension of violent exposure. Research indicates that witnessing violence tends to predict externalizing behaviors like aggression, whereas direct victimization more often leads to internalizing outcomes such as anxiety or depression (38). This distinction suggests that vicarious exposure to violence seeing others harmed can shape adolescents' moral reasoning and normalize aggression as a survival or coping mechanism.

In conclusion, this study provides compelling evidence that exposure to community violence significantly predicts both reactive and proactive aggression among Afghan refugee adolescents. This relationship operates partly through cognitive mechanisms hostile attribution biases and normative beliefs that justify aggression while the expected role of guilt was not supported. Collectively, these findings emphasize that interventions must extend beyond behavioral control, focusing instead on cognitive restructuring, moral education, and social norm change. Addressing these cognitive and cultural mechanisms in a context-sensitive manner may offer more durable strategies for breaking cycles of violence and promoting psychosocial well-being among refugee youth.

Limitations: The study's findings should be interpreted with caution due to several limitations. The cross-sectional design prevents the establishment of causality. The purposive, non-random sampling limits the generalizability. Additionally, gender differences were not examined in the present study but are likely to be influential, as male and female adolescents may experience and express aggression differently due to sociocultural expectations. The reliance on a single-item scenario for hostile attribution is a measurement limitation that could be improved with more robust tools. Finally, the analysis did not separate reactive and proactive aggression, which may

show different associations with the study variables. The regression models were not adjusted for demographic characteristics such as age and socioeconomic status, nor for prior trauma or direct armed-conflict exposure, none of which were modelled here and any of which may confound the observed associations. In addition, the internal consistency of the guilt measure was modest (α = .62), so the non-significant association involving guilt should be interpreted with particular caution.

Future Implications

The findings also highlight several important directions for future research. Parental involvement, for example, has been found to buffer the impact of community violence on adolescent aggression (48). Exploring family protective factors such as emotional warmth, parental monitoring, or communication within refugee populations could reveal resilience pathways. Longitudinal research would be valuable to trace the development of cognitive factors such as hostile attributions and normative beliefs over time, and to evaluate whether interventions targeting these processes can sustainably reduce aggression.

Clinical and Policy Implications: Despite the limitations, this study has clear and actionable implications for those working with refugee populations. The findings strongly suggest that effective interventions must be multi-pronged, addressing both the environmental context and the internal cognitive processes.

For Practitioners: Mental health and psychosocial support (MHPSS) programs should incorporate modules based on Cognitive-Behavioral Therapy (CBT) that are culturally adapted. These modules can directly target the cognitive factors identified in this study by:

Cognitive Restructuring: Implementing "reattribution training" to help adolescents identify and challenge their hostile attritional biases. This involves teaching them to slow down their thought processes, generate alternative, non-hostile explanations for others' behavior, and develop empathy and perspective-taking skills.

Norm and Belief Modification: Engaging youth in discussions and activities that challenge the perceived acceptability of aggression. This can involve teaching and rehearsing pro-social, non-violent methods of conflict resolution and social problem-solving.

For Policymakers and Aid Organizations: Efforts must be made to improve the safety and security of refugee camp environments to reduce initial exposure to violence. Beyond this, there is a critical need to fund and scale up school-based and community-based mental health programs. These programs can serve as a platform for delivering preventative interventions that build social-emotional skills and resilience in all children, not just those already exhibiting aggressive behaviors.

Declarations

Ethics approval and consent to participate

The study protocol was approved by the Institutional Review Board of Shaheed Benazir Bhutto Women University. Written informed consent was obtained from all participants and their legal guardians.

Availability of data and materials

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Competing interests

The author declares no competing interests.

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Authors' contributions

All the authors contributed substantially in conceptualization, data collection, data analysis, manuscript drafting, and final approval of the version to be published. All authors agree to be accountable for all aspects of the work. The specific contributions are as follows: Uzma Safi (US) provided substantial contributions to the conception and design of the work, led the project administration from inception to completion, and was integral to drafting and critically revising the manuscript. Sonia Shagufta (SS) contributed to the work's design and the acquisition of data by securing critical ethical and regulatory approvals, provided supervision, and critically revised the manuscript for important intellectual content. Maria Ayaz (MA) and Imtiaz Ali (IA) contributed to the analysis and interpretation of the data and performed a critical review of the entire manuscript, with specific focus on the results and discussion, to ensure intellectual rigor. Muhammad Awais Paracha (MAP) and Somia Amin (SA) made contributions to the intellectual

framing, data collection, and interpretation drafted the sections of original manuscript, assembled the full text, and performed critical revisions.

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