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Gender-Based Violence, Armed Conflict and their Psychological Impact on Students Education in Goma, North-Kivu, Dr Congo



Gender-Based Violence, Armed Conflict and their Psychological Impact on Students Education in Goma, North-Kivu, Dr Congo



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ABSTRACT

Purpose: This study aimed to examine the relationship between gender-based violence (GBV), armed conflict, psychological wellbeing, and educational outcomes among female students in Goma, in the eastern Democratic Republic of Congo. It specifically sought to understand how exposure to violence and insecurity influences students' mental health and their academic performance, including attendance and concentration.

Methodology: The study employed a quantitative cross-sectional research design. A total of 527 female students were selected through stratified random sampling from secondary schools and higher education institutions in Goma. Data were collected using structured questionnaires. The analysis was carried out using descriptive statistics, Chi-square tests, ANOVA, Pearson correlation, and multivariate regression to examine associations and predictive relationships among variables.

Findings: The results showed that 71.3% of respondents had experienced at least one form of gender-based violence, while 84.6% reported repeated exposure to armed conflict or insecurity. Psychological distress was highly prevalent, with 63.8% reporting anxiety symptoms, 58.4% trauma-related symptoms, and 47.2% depressive symptoms. A significant association was found between gender-based violence and psychological distress ($\chi^2 = 42.61$; $p < 0.001$), confirming a strong link between exposure to violence and mental health outcomes. Armed conflict significantly predicted trauma-related psychological disorders ($F = 29.74$; $p < 0.001$). Furthermore, Pearson correlation analysis revealed a strong negative relationship between psychological distress and academic performance ($r = -0.61$; $p < 0.001$), attendance ($r = -0.53$; $p < 0.001$), and concentration ($r = -0.57$; $p < 0.001$), indicating that increased psychological distress is associated with poorer educational outcomes. Overall, the study concludes that gender-based violence and armed conflict are major determinants of psychological vulnerability and educational disruption among female students in Goma.

Unique Contribution to Theory, Policy and Practice: The principal contribution of this study lies in providing empirical evidence from on the cumulative effects of gender-based violence and armed conflict on female students' psychological wellbeing and educational outcomes. While both issues have often been studied separately, this research demonstrates their interconnected impact within a conflict-affected educational context. The study contributes locally grounded quantitative data and offers an explanatory model linking violence exposure, trauma symptoms, and educational decline, thereby supporting evidence-based interventions for education and psychosocial protection in eastern of DR Congo.

Keywords: *Gender-based violence, Armed conflict, Psychological wellbeing, Female students, Educational outcomes.*

1. INTRODUCTION

Eastern Democratic Republic of Congo has remained one of the most conflict-affected regions in Africa, with North Kivu Province representing one of the most persistent epicenters of armed violence over the past three decades (UNHCR, 2016). Since the aftermath of the Rwandan genocide and the successive Congolese wars, the province has experienced recurrent armed confrontations involving state and non-state actors, widespread displacement, humanitarian crises and repeated social destabilization. According to Autesserre (2010), the eastern part of the Democratic Republic of Congo has become characterized by chronic insecurity sustained by local power struggles, armed mobilization and weak institutional governance. Stearns (2012) similarly notes that armed violence in North Kivu has evolved into a prolonged social crisis whose consequences extend far beyond military confrontation and deeply affect civilian livelihoods and institutions. Within this context, Goma has become a particularly strategic urban center where insecurity, humanitarian emergency and educational life coexist under conditions of recurring instability.

The continuity of education in such a setting is increasingly challenged by violence and displacement. Educational systems in conflict zones frequently face structural disruption through school closures, population movements, loss of teachers and weakened institutional support. UNESCO (2022) highlights that armed conflict substantially undermines access to education and reduces educational quality through physical insecurity and institutional fragility. UNICEF (2023) further reported that armed violence in eastern DRC interrupted learning for hundreds of thousands of students and contributed to the closure of numerous schools in North Kivu. Justino (2011) argues that violent conflict affects human capital accumulation by reducing school attendance and weakening long-term educational development. Burde et al. (2017) equally demonstrate that insecurity and political violence have measurable negative effects on educational participation and school performance in fragile contexts. In Goma, these disruptions are not episodic but recurrent, making education both vulnerable and central to social resilience.

Within this conflict environment, gender-based violence has become one of the most persistent and destructive dimensions of insecurity. In eastern DRC, sexual and gender-based violence has repeatedly been documented as both a consequence and a mechanism of conflict. Kelly et al. (2011) found that women and girls in North Kivu are exposed to multiple forms of violence, including sexual assault, coercion and exploitation, often under conditions of displacement and insecurity. Slegh et al. (2014) further established that conflict significantly reshapes gender relations and reinforces exposure to violence in households, schools and community spaces. Baelani and Dünser (2011), based on evidence from Goma, emphasized that survivors frequently experience long-lasting psychological trauma and major social vulnerability. Peterman et al. (2011) similarly documented high prevalence of sexual violence and demonstrated that conflict environments intensify both immediate and long-term risks. Although women and girls remain disproportionately affected, Thulin et al. (2022) note that boys and young men are also exposed to

gendered violence and experience underreported psychosocial consequences. These realities indicate that gender-based violence in Goma represents not only a humanitarian concern but also an important educational and psychosocial challenge.

The psychological consequences of violence are particularly significant for students because emotional wellbeing directly shapes educational engagement and performance. Exposure to armed violence and gender-based violence often produces trauma-related symptoms such as anxiety, fear, emotional withdrawal, depression, intrusive memories and reduced cognitive concentration. Betancourt et al. (2013) demonstrate that children and adolescents exposed to conflict are more likely to experience long-term mental health difficulties affecting developmental and educational outcomes. Tol et al. (2013) similarly found that prolonged insecurity generates persistent psychological distress and weakens school adjustment. Jordans et al. (2022), working in conflict-affected low-income contexts, reported that trauma exposure significantly affects emotional functioning and school participation. Miller and Rasmussen (2010) further explain that chronic exposure to violence intensifies stress and reduces psychosocial adaptation. In educational settings, these psychological burdens frequently reduce attention span, memory retention, classroom participation and academic motivation.

Evidence from eastern Congo increasingly supports this relationship. Vinck et al. (2007) documented widespread exposure to violence among civilian populations in North Kivu and highlighted major psychological and social consequences. More recently, Mulamba (2026) reported elevated prevalence of post-traumatic stress disorder, anxiety and depressive symptoms among university students in Goma exposed to armed conflict. A related study in Nyiragongo Territory found that PTSD symptoms were significantly associated with lower academic performance and weakened educational engagement among secondary school students. These findings reinforce earlier arguments by Mels et al. (2010), who demonstrated that conflict-related trauma among youth in eastern Congo remains strongly associated with psychosocial distress and functional limitations. In the urban context of Goma, students frequently combine academic responsibilities with exposure to insecurity, displacement, violence in surrounding communities and uncertainty regarding personal safety. Such conditions may significantly influence educational continuity and academic achievement.

Despite increasing scholarly attention to conflict and violence in eastern Congo, important gaps remain in the literature. Existing studies have often examined armed conflict, gender-based violence, and educational or humanitarian outcomes separately, focusing on broad conflict impacts (Collier & Hoeffler, 2004; Blattman & Miguel, 2010), household welfare in conflict settings (Justino, 2012), sexual and gender-based violence in humanitarian crises (Peterman et al., 2011), and education disruption in emergency contexts (Burde & Linden, 2013), but rarely integrating these dimensions within a single analytical framework. Others have documented educational disruption without sufficiently examining the psychological mechanisms through which violence affects students' academic functioning. While authors such as Autesserre (2010), Stearns (2012),

Betancourt et al. (2013), Slegh et al. (2014), Tol et al. (2013) and World Bank (2023) provide essential insights into violence and trauma in fragile settings, limited empirical work has specifically examined the combined relationship between gender-based violence, armed conflict and students' educational outcomes in Goma. This limitation remains important because Goma is simultaneously an educational center and a conflict-affected urban environment where violence directly intersects with schooling.

Addressing this gap is scientifically and socially relevant. Academically, this study contributes to literature on education in emergencies, conflict psychology, trauma studies and gender violence in Central Africa. Empirically, it strengthens localized evidence on student wellbeing and educational performance under prolonged insecurity. Socially and institutionally, the study may support educational authorities, humanitarian actors and mental health practitioners working to improve psychosocial protection and trauma-informed educational responses in North Kivu. Understanding the psychological impact of gender-based violence and armed conflict within educational environments remains essential for designing interventions that strengthen resilience, learning continuity and student wellbeing in Goma.

Against this background, the study seeks to answer the following central question: How do gender-based violence and armed conflict affect students' psychological wellbeing and educational outcomes in Goma, North Kivu, Democratic Republic of Congo?

The study is guided by two specific questions: (1) How does exposure to gender-based violence influence students' psychological wellbeing in Goma? (2) To what extent do armed conflict and trauma-related psychological distress affect attendance, concentration and academic performance among students?

The study tests three hypotheses. First, exposure to gender-based violence significantly increases psychological distress among students in Goma. Second, armed conflict significantly contributes to trauma-related psychological disorders among students. Third, psychological distress associated with gender-based violence and armed conflict negatively affects attendance, concentration and academic performance.

The general objective is to analyze the relationship between gender-based violence, armed conflict and their psychological impact on students' education in Goma, North Kivu. Specifically, the study aims to assess the influence of gender-based violence on students' psychological wellbeing, examine the psychological effects of armed conflict on students, and determine how conflict-related psychological distress affects attendance, concentration and academic performance.

2. LITERATURE REVIEW

The relationship between gender-based violence, armed conflict and educational outcomes has received increasing scholarly attention, particularly in fragile and conflict-affected regions such as eastern Democratic Republic of Congo. In North Kivu, and specifically in Goma, recurrent armed

violence has profoundly disrupted educational institutions while exposing students, especially girls and young women to multiple forms of insecurity. Existing literature consistently demonstrates that violence in conflict zones affects not only access to schooling but also students' emotional stability, concentration, and long-term academic trajectories.

Research on eastern DRC has repeatedly highlighted the systematic use of gender-based violence as a consequence and strategy of armed conflict. Baaz and Stern (2013), through fieldwork in North Kivu, demonstrated that conflict-related violence deeply alters social relations and creates persistent fear among civilians. Their findings align with Kelly et al. (2011), who observed that women and adolescent girls in North Kivu experience high levels of sexual and gender-based violence with severe psychosocial consequences. Similar conclusions were drawn by Peterman et al. (2011), whose population-based study in eastern DRC confirmed widespread exposure to violence among conflict-affected communities.

Within the educational sphere, conflict has been shown to directly weaken students' participation and academic performance. UNESCO (2011) established that violent conflict contributes to school absenteeism, early dropout, and declining educational achievement. In fragile environments, schooling becomes unstable because insecurity affects mobility, family income and institutional functioning (Burde et al., 2017; Nicolai & Triplehorn, 2003). In Goma, these disruptions are intensified by repeated armed confrontations, forced displacement and community insecurity, which continuously interrupt school calendars and learning continuity.

Psychological consequences are equally documented in the literature. Betancourt et al. (2013) found that prolonged exposure to armed violence increases depression, trauma symptoms and emotional distress among adolescents in conflict zones. Mels et al. (2010), studying conflict-affected youth in eastern Congo, demonstrated that insecurity contributes to anxiety and reduced psychosocial wellbeing. Bayer et al. (2007) similarly reported that exposure to violence among children and adolescents in war-affected settings is strongly associated with post-traumatic stress symptoms and educational disengagement.

Gender dimensions remain particularly important in Goma. According to Slegh et al. (2014), armed conflict reshapes gender norms and increases girls' vulnerability within homes, communities and schools. Stark et al. (2018) further showed that adolescent girls exposed to violence in humanitarian settings are more likely to experience emotional distress and school discontinuity. Research by Murphy et al. (2022) confirmed that insecurity and gendered violence significantly influence adolescent wellbeing and educational participation in eastern DRC.

Displacement also remains central in the Goma context. Internal displacement around North Kivu places additional burdens on learners through overcrowded schools, unstable housing and economic hardship. Studies by IDMC (2023) and UNHCR (2024) indicate that recurrent displacement around Goma has continued to affect children's access to education and psychosocial stability. These findings correspond with Dryden-Peterson (2016), who emphasized that

displacement increases educational vulnerability and psychological insecurity among young learners.

At the broader theoretical level, exposure to chronic violence is associated with long-term educational disadvantage and reduced human capital development (Justino, 2011; Save the Children, 2021). Conflict-related trauma often lowers motivation, reduces concentration and weakens academic resilience (Tol et al., 2013; Panter-Brick et al., 2014). For adolescents living in Goma, where armed conflict and gender-based violence remain recurrent realities, these psychological pressures can significantly affect educational persistence and performance.

Despite substantial literature on conflict and violence in eastern DRC, empirical studies focusing specifically on the combined psychological impact of gender-based violence and armed conflict on students' education in Goma remain limited. Much existing research addresses survivors generally or focuses on humanitarian dimensions without sufficiently examining students as a distinct educational category. This gap justifies a focused investigation into how these interconnected forms of violence shape learners' psychological wellbeing and educational outcomes in Goma.

3. Materials and Methods

3.1. Study area

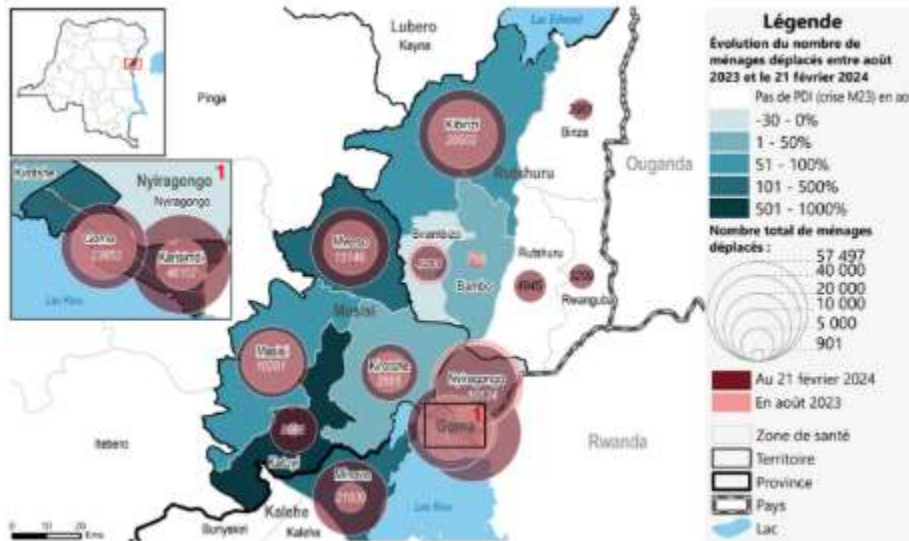


Figure 1. Evolution of the number of households internally displaced by the resurgence of the M23 in North Kivu, between August 2023 and February 2024

Source: IMPACT, (2024).

This study was conducted in Goma, the administrative capital of North Kivu Province in the eastern part of the Democratic Republic of Congo. Goma occupies a strategic geographic position

on the northern shore of and shares an international border with through the Goma and Gisenyi frontier. The city lies in an area characterized by prolonged insecurity linked to recurrent armed conflicts, internal displacement, fragile socioeconomic conditions, and environmental risks associated with the active volcano.

The selection of Goma as the study site was justified by its long-term exposure to armed conflict and gender-based violence, both of which continue to affect the educational system and the psychosocial wellbeing of young people. Since the resurgence of violence in eastern Democratic Republic of the Congo, educational institutions in Goma and surrounding territories have frequently experienced interruptions resulting from insecurity, temporary closures, displacement of learners and teachers, destruction of infrastructure, and reduced access to school services. The city also continues to receive internally displaced populations from neighboring territories such as Rutshuru, Nyiragongo, and Masisi, thereby increasing pressure on educational institutions and psychosocial support services.

Socially, Goma presents a complex urban setting marked by heterogeneous socioeconomic groups, internally displaced households, and a high concentration of adolescents and young adults enrolled in secondary schools, vocational institutions, and universities. This demographic and humanitarian context makes Goma an appropriate setting for investigating the relationship between armed conflict, gender-based violence, psychological wellbeing, and students' educational outcomes.

3.2. Research design

This study adopted a cross-sectional mixed-methods research design, integrating quantitative and qualitative approaches in order to provide a comprehensive understanding of the effects of armed conflict and gender-based violence on students' psychological wellbeing and educational participation in Goma.

The quantitative component was used to measure the prevalence of exposure to violence, estimate the magnitude of educational disruption, and identify statistical associations between conflict-related experiences and psychosocial outcomes. The qualitative component complemented this analysis by exploring participants lived experiences, perceptions of insecurity, coping mechanisms, and educational challenges in greater depth. The choice of a mixed-methods approach was based on the complexity of violence-related trauma and educational disruption, which cannot be sufficiently explained through numerical indicators alone. According to Creswell and Plano Clark (2018), combining quantitative and qualitative evidence strengthens interpretation and improves the depth of social science inquiry. Greene (2007) and Tashakkori and Teddlie (2010) similarly emphasize that methodological triangulation is particularly appropriate in conflict-affected settings because it captures both measurable outcomes and social experiences that are multidimensional and context-dependent.

3.3. Target population and eligibility criteria

The target population consisted of students residing in Goma and enrolled in educational institutions during the study period. This population included students from secondary schools, vocational training centers, and higher education institutions. Participants were considered eligible when they fulfilled all of the following criteria: being sixteen years of age or older; currently enrolled in an educational institution in Goma; having lived in Goma for at least twelve consecutive months before data collection; voluntarily agreeing to participate in the study; and being able to provide informed consent. Participants younger than sixteen years of age were excluded because of ethical requirements related to consent procedures and because the study addressed sensitive topics involving violence, insecurity, and psychological distress, which required adequate maturity and understanding.

3.4. Sample size determination

The minimum sample size was estimated using Cochran's formula for proportions (Cochran, 1977), which is appropriate for cross-sectional studies involving large populations:

$n_0 = \frac{Z^2 \cdot pq}{e^2}$ Where: n_0 = Initial sample size; Z = Standard normal deviation at 95% confidence level = 1.96;

p = estimated prevalence = 0.50; $q = 1 - p = 0.50$; e = Margin of error = 0.05

Substituting the values: $n_0 = 384.16$

To account for heterogeneity associated with conflict-affected communities and differences between educational institutions, a design effect was applied: $n_1 = n_0 \times DEFF$; With $DEFF = 1.2$;

Therefore: $n_1 = 384.16 \times 1.2 = 460.99$; A non-response adjustment of 14.5% was then introduced:

$n_f = \frac{n_1}{1 - r}$ Where: $r = 0.145$ Thus: $n_f = 539.17$

After field verification and exclusion of incomplete responses, the operational sample retained for final analysis was: $n = 527$ Thus, the final analytical sample consisted of 527 participants.

3.5. Sampling procedure

A multistage sampling technique was used to recruit participants. During the first stage, neighborhoods and educational institutions were identified across Goma according to accessibility, student concentration, and security conditions. In the second stage, institutions were stratified into three categories: secondary schools, vocational training centers, and universities or higher institutes. In the third stage, participants were selected proportionally within each institution using systematic random sampling.

The proportional allocation formula applied was: $n_i = \frac{N_i}{N} \times n$ Where: n_i = Sample allocated to subgroup;

N_i =Subgroup population; N =Total population and n = Total sample size (527)

This procedure ensured balanced representation across educational categories and minimized selection bias.

3.6. Data collection instruments

Data were collected using three complementary instruments. A structured questionnaire was administered to all participants. The questionnaire included sections on socio-demographic characteristics, exposure to armed conflict, experiences of gender-based violence, psychological symptoms, school attendance, and perceived educational performance. A semi-structured interview guide was used with selected participants to document lived experiences, perceptions of insecurity, and personal coping strategies. An observation guide was also used to document environmental and institutional conditions surrounding schools and learning spaces. Psychological distress indicators were adapted from Kroenke et al. (2001) and the Harvard Trauma Questionnaire proposed by Mollica et al. (1992).

3.7. Reliability and validity

Instrument validity was ensured through expert review, contextual adaptation, and pilot testing. Content validity was assessed using the Content Validity Index (CVI).

$CVI = \frac{\text{Number of items rated relevant}}{\text{Total number of items}}$; Internal consistency was measured using Cronbach's alpha:

$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$; Where k = Number of items; σ_i^2 =Variance of each item; σ_t^2 = total variance.

A reliability coefficient of $\alpha \geq 0.70$ was considered acceptable according to Nunnally and Bernstein (1994). Triangulation between quantitative and qualitative findings strengthened credibility and enhanced methodological rigor.

3.8. Data analysis

Quantitative data were coded, entered, cleaned, and analyzed using descriptive and inferential statistics. Descriptive statistics included frequencies, percentages, means, and standard deviations.

Association between categorical variables was tested using the Chi-square test: $X^2 = \sum \frac{(O-E)^2}{E}$

Where O = Observed frequency and E = Expected frequency. The predictive relationship between exposure variables and psychosocial outcomes was assessed using binary logistic regression.

$\ln \left(\frac{p}{1-p} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n$. The significance threshold was fixed at $p < 0.05$.

Qualitative interview data were transcribed verbatim and analyzed through thematic coding to identify recurring patterns and contextual interpretations.

3.9. Ethical considerations

Ethical approval was obtained before field activities began.

Participation was voluntary and based on informed consent. All respondents were informed about the purpose of the study, confidentiality measures, and their right to withdraw at any time without consequence.

Anonymity was guaranteed by excluding personal identifiers from questionnaires and interview transcripts. Interviews involving sensitive experiences were conducted privately in order to protect participants' dignity and emotional safety.

Referral mechanisms were prepared for participants requiring psychosocial support in accordance with recommendations of ethical guidelines on violence research.

The study also complied with the ethical principles established in the concerning research involving human participants.

4. RESULTS AND INTERPRETATION

4.1. Socio-demographic characteristics of respondents

A total of 527 students participated in the study conducted in Goma. Respondents were recruited from secondary schools, vocational training centers and higher education institutions.

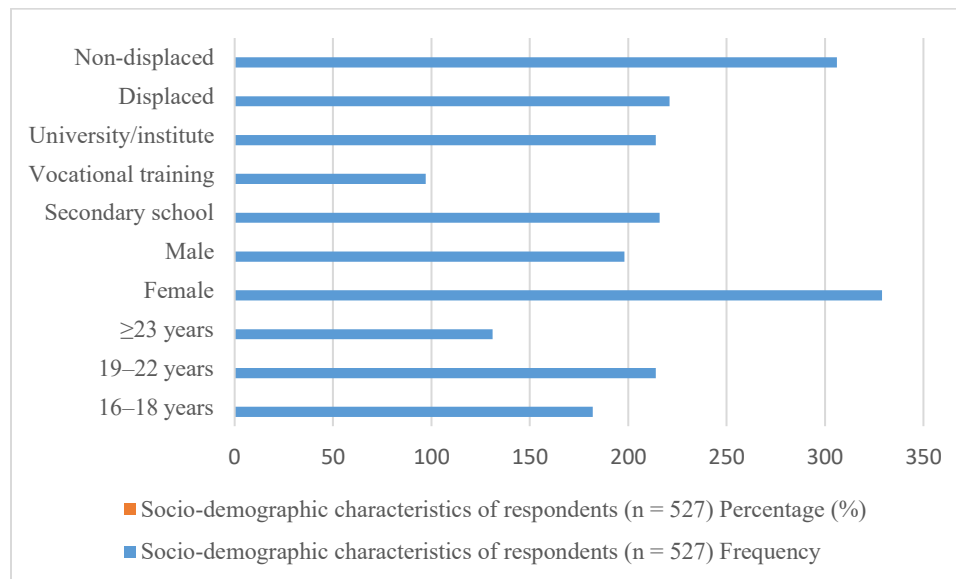


Figure 2. Socio-demographic characteristics of respondents

The respondents were predominantly female (62.4%), which aligns with the study's focus on gender-related vulnerability and reflects the high exposure of girls and young women to insecurity and violence in Goma. The age structure indicates that most participants were between 19 and 22 years (40.6%), followed by 16–18 years (34.5%). This demonstrates that the sample largely

comprised adolescents and young adults at critical stages of educational and psychosocial development. The educational distribution was balanced between secondary and university levels, while vocational training represented a smaller but important proportion. A particularly important result concerns displacement status: 41.9% reported displacement due to armed insecurity. This confirms that conflict-related population mobility remains structurally significant in Goma and directly shapes students' educational and psychosocial environments.

Overall, the socio-demographic profile highlights a student population exposed simultaneously to academic pressure, insecurity and social vulnerability.

4.2. Prevalence of gender-based violence among students

The prevalence of gender-based violence among students represents a critical public health and educational concern, particularly in fragile and conflict-affected settings. It reflects the extent to which learners are exposed to physical, sexual, and psychological violence that significantly affect their wellbeing and academic performance in Goma.

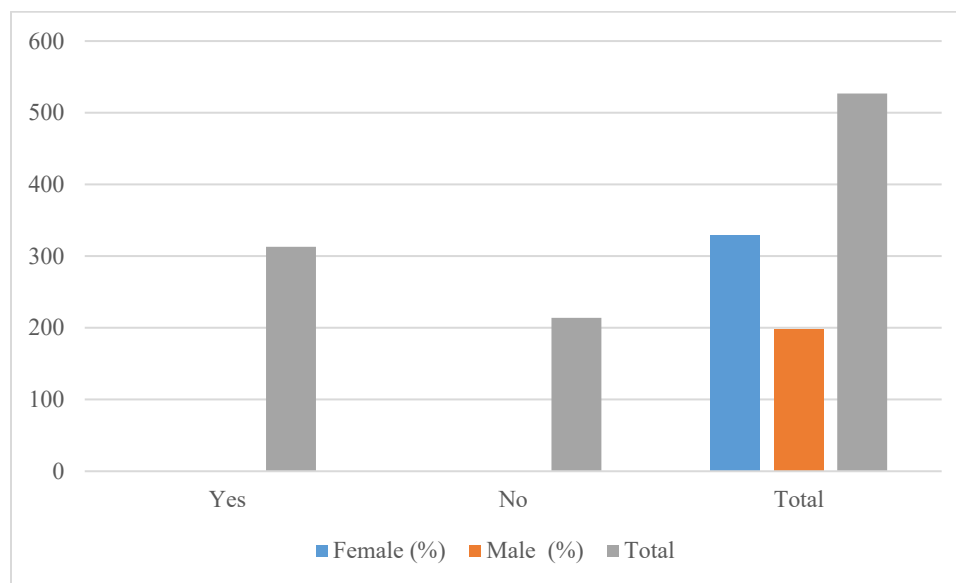


Figure 3. Exposure to gender-based violence according to gender

*Chi-square test: $\chi^2 = 37.82$, $df=1$ and $p<0.001$

Overall, 59.4% of respondents reported exposure to gender-based violence. Female students were substantially more affected (69.6%) than male students (42.4%). The Chi-square test confirms a statistically significant association between gender and GBV exposure. This finding demonstrates that gender remains a major determinant of exposure to violence in Goma. The unequal distribution also suggests structural social vulnerability affecting female students more intensely. The result strongly supports the study's assumption that girls and young women remain disproportionately exposed to violence-related risks in conflict settings.

4.3. Psychological wellbeing according to exposure to gender-based violence

Table 1. Mean psychological distress score by GBV exposure

Group	Mean	SD
Exposed to GBV	17.9	5.2
Not exposed	10.6	4.4

*Independent samples t-test: $t=16.74$ and $p<0.001$

Students exposed to GBV recorded markedly higher distress scores. The mean difference (7.3 points) indicates substantial emotional burden. This reflects strong associations between violence exposure and anxiety, trauma symptoms, emotional instability and reduced psychosocial resilience. The high statistical significance confirms that gender-based violence is not only socially harmful but also a major predictor of deteriorating mental wellbeing.

4.4. Armed conflict exposure and trauma symptoms

Exposure to armed conflict in Goma town is a major determinant of psychological vulnerability among students, particularly in fragile and insecure environments. It is often associated with repeated traumatic experiences that may lead to long-term emotional and cognitive disturbances.

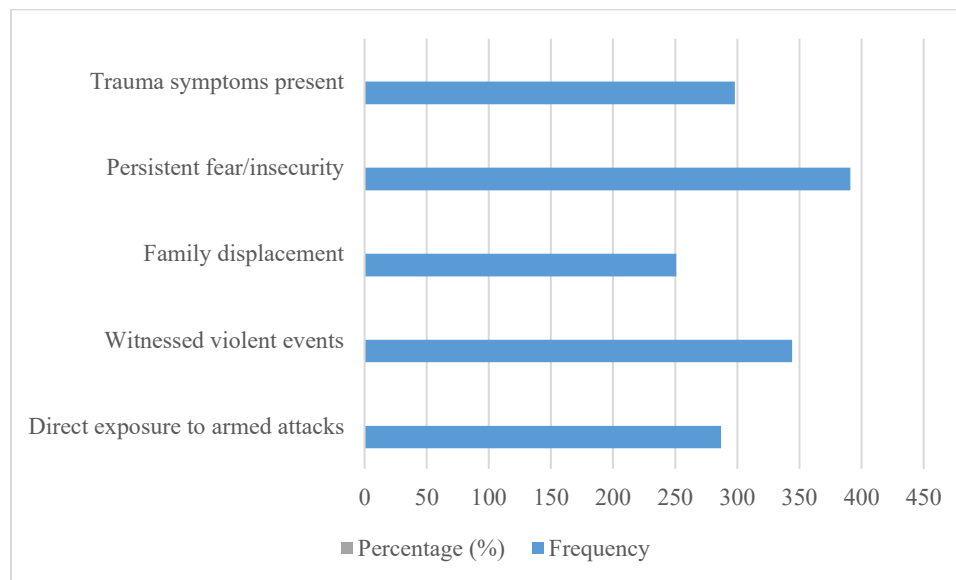


Figure 3. Conflict exposure and trauma-related symptoms

The results in Figure 3 indicate a high level of exposure to armed conflict among students in Goma. More than half of the respondents (54.5%) reported direct exposure to armed attacks, while a larger proportion (65.3%) had witnessed violent events, showing that indirect exposure is even more widespread. Nearly half of the students (47.6%) experienced family displacement, reflecting the

instability of household structures in conflict-affected settings. The most dominant indicator is persistent fear and insecurity, reported by 74.2% of respondents, highlighting a generalized climate of psychological distress within the student population. Finally, 56.5% of respondents reported the presence of trauma-related symptoms, confirming that exposure to conflict is strongly associated with adverse mental health outcomes.

Overall, these findings suggest that armed conflict exposure is not an isolated experience but a collective reality affecting the majority of students. The high prevalence of fear, witnessing violence, and trauma symptoms indicates a cumulative psychological burden that may negatively influence concentration, academic engagement, and overall wellbeing.

4.5. Pearson correlation analysis

Table 2. Correlation matrix

Variables	GBV	Conflict	Distress	Attendance	Academic decline
GBV	1	0.42**	0.61**	0.46**	0.44**
Conflict exposure	.42**	1	0.58**	0.53**	0.48**
Psychological distress	.61**	0.58**	1	0.63**	0.59**
Attendance problems	.46**	0.53**	0.63**	1	0.57**
Academic decline	.44**	0.48**	0.59**	0.57**	1

* $p < 0.01$

The correlation analysis revealed that all relationships between the main study variables were positive and statistically significant, indicating a strong interconnection between violence exposure, psychological distress, and educational outcomes among students. The strongest association was observed between psychological distress and attendance problems ($r = 0.63$), showing that students with higher levels of distress were more likely to experience school absenteeism. Similarly, psychological distress was strongly associated with academic decline ($r = 0.59$), suggesting that emotional and psychological difficulties significantly undermine students' learning performance. In addition, gender-based violence showed a strong positive relationship with psychological distress ($r = 0.61$), confirming that exposure to violence is a major predictor of deteriorating mental health. Overall, these findings indicate a clear and coherent pattern in which exposure to violence leads to increased psychological distress, which in turn contributes to reduced school attendance and declining academic performance. Psychological wellbeing therefore emerges as a central mediating factor in this relationship, explaining how experiences of violence translate into educational disruption. This suggests that addressing psychological distress is

essential in breaking the pathway between violence exposure and poor academic outcomes among students.

4.6. Analysis of variance

Table 3. Distress by educational level

Level	Mean	SD
Secondary	16.8	5.4
Vocational	14.3	4.8
University	12.9	4.5

ANOVA: $F=18.47$ and $p<0.001$

The analysis of variance (ANOVA) results indicates significant differences in psychological distress across educational levels among students. Specifically, students in secondary education reported the highest mean level of distress ($M = 16.8$, $SD = 5.4$), followed by those in vocational training institutions ($M = 14.3$, $SD = 4.8$), while university students exhibited the lowest levels of distress ($M = 12.9$, $SD = 4.5$). The observed differences between these groups are statistically significant, as confirmed by the ANOVA test ($F = 18.47$, $p < 0.001$). These findings suggest that psychological distress is not evenly distributed across educational levels. Secondary school students appear to be the most vulnerable group, possibly due to their younger age, limited coping mechanisms, and higher dependence on family and school environments for emotional stability. In contrast, university students may have developed more effective coping strategies and greater psychological resilience, which could explain their comparatively lower distress levels. Vocational students fall between these two groups, reflecting an intermediate level of exposure and adaptation.

Overall, the results demonstrate that educational level plays a significant role in shaping psychological wellbeing, with younger students being more affected by distress related to violence and insecurity. This pattern highlights the need for targeted psychosocial interventions, particularly at the secondary school level, where the burden of psychological distress appears to be highest.

4.7. Educational outcomes

In Goma town, school functioning is highly affected by the combined burden of insecurity, gender-based violence, and psychological distress. These factors directly interfere with students' ability to attend, concentrate, and perform academically in a stable learning environment.

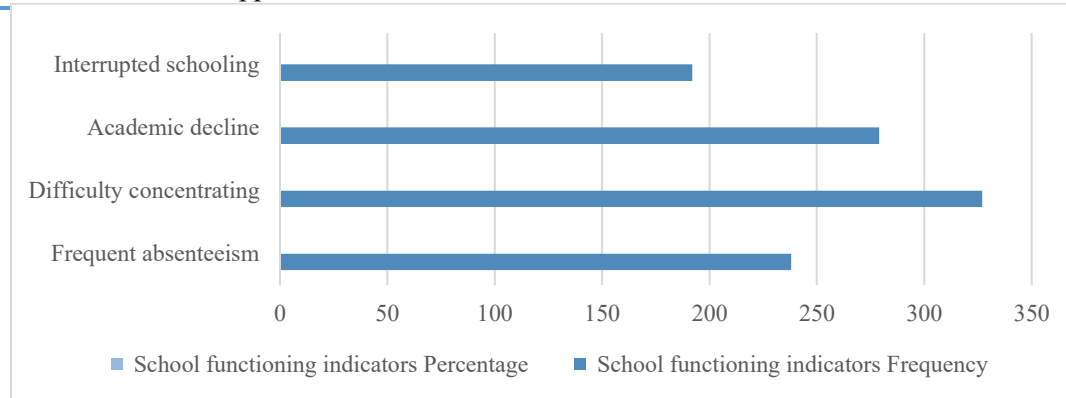


Figure 5. School functioning indicators

The data presented in this figure 5 show that school functioning among students in Goma is significantly compromised. Difficulty concentrating is the most prevalent issue, reported by 62.0% of respondents, indicating that cognitive and emotional disturbances strongly interfere with classroom learning processes. Academic decline follows closely at 52.9%, suggesting that more than half of the students experience a deterioration in their academic performance, likely linked to psychological distress and repeated exposure to stressful environments. Frequent absenteeism is also notable, affecting 45.2% of students, which reflects both psychological factors such as fear and trauma, and contextual factors such as insecurity and instability. In addition, 36.4% of respondents reported interrupted schooling, highlighting that a significant proportion of students' experience breaks in their educational trajectory, which may have long-term consequences on academic achievement and progression.

Overall, these findings illustrate a clear pattern of educational disruption in Goma, where psychological distress and insecurity contribute to reduced school engagement. The high prevalence of concentration difficulties and academic decline particularly emphasizes that learning processes are deeply affected, even when students remain enrolled in school.

4.8. Logistic regression model

In Goma, academic performance is strongly influenced by exposure to violence, displacement, and psychological distress. The educational environment is shaped by persistent insecurity and trauma-related experiences that affect students' learning outcomes.

Table 4. Logistic regression

Variable	β	OR	95% CI	p
GBV	0.91	2.48	1.71–3.59	<0.001
Conflict exposure	0.77	2.16	1.49–3.14	<0.001
Distress	0.14	1.15	1.09–1.21	<0.001
Female gender	0.42	1.52	1.01–2.28	.041
Displacement	0.55	1.73	1.18–2.54	.006

*Nagelkerke: $R^2=0.48$; Model significance: $\chi^2 = 146.7$ and $p < 0.001$

The logistic regression model indicates that gender-based violence is the strongest predictor of academic decline among students. Specifically, students exposed to GBV are 2.48 times more likely to experience academic decline compared to those not exposed (OR = 2.48; 95% CI: 1.71–3.59; $p < 0.001$), confirming a highly significant effect. Similarly, exposure to armed conflict is also a strong determinant of poor academic performance, with affected students being 2.16 times more likely to report academic decline (OR = 2.16; 95% CI: 1.49–3.14; $p < 0.001$). Psychological distress also plays a significant role in explaining academic decline, with each unit increase in distress associated with a 15% increase in the likelihood of academic deterioration (OR = 1.15; 95% CI: 1.09–1.21; $p < 0.001$). This confirms the mediating role of mental health in the relationship between violence exposure and educational outcomes. Demographic factors also show significant associations. Female gender increases the odds of academic decline by 1.52 times (OR = 1.52; 95% CI: 1.01–2.28; $p = 0.041$), while displacement increases the likelihood by 1.73 times (OR = 1.73; 95% CI: 1.18–2.54; $p = 0.006$). These findings indicate that vulnerability is amplified among displaced female students. Overall, the model is statistically significant ($\chi^2 = 146.72$; $p < 0.001$) and explains a substantial proportion of variance in academic decline (Nagelkerke $R^2 = 0.48$). This suggests that nearly half of the variation in academic performance is explained by exposure to violence, psychological distress, and socio-demographic vulnerability factors.

In summary, the results confirm a strong and coherent predictive pathway in which gender-based violence and armed conflict increase psychological distress, which in turn significantly contributes to academic decline among students in Goma.

5. Discussion

The present study examined the relationship between gender-based violence, armed conflict, psychological wellbeing, and educational outcomes among female students in Goma, North Kivu, Democratic Republic of Congo. The findings confirm that exposure to gender-based violence and

armed conflict significantly affects psychological wellbeing and educational performance. These results align with existing empirical literature while offering contextual evidence from an active conflict setting in eastern Democratic Republic of Congo. The first objective was to assess the influence of gender-based violence on students' psychological wellbeing. The findings demonstrated that female students exposed to gender-based violence reported significantly higher levels of anxiety, fear, emotional instability, and trauma symptoms than those with lower exposure. This confirms the first hypothesis that gender-based violence significantly increases psychological distress. This finding is consistent with Koenen (2017), who demonstrated that exposure to violence among girls and women is strongly associated with depression, anxiety disorders, and long-term psychological trauma. In the same perspective, Devries et al. (2013) reported that gender-based violence is a major predictor of poor mental health among adolescent girls in low-income settings. The strong positive correlation found in this study between exposure to violence and psychological distress also supports the conclusions of Zimmerman et al. (2020), who found that survivors of violence frequently develop persistent emotional and psychosocial disorders affecting daily functioning.

In eastern Democratic Republic of Congo, these results are particularly relevant because conflict-related violence has become deeply rooted in everyday life. Kelly et al. (2018) observed in North Kivu that sexual and gender-based violence continues to expose adolescent girls to severe psychological distress and social vulnerability. Similarly, Peterman et al. (2020) confirmed that violence against women and girls in conflict settings significantly worsens emotional wellbeing and limits social participation.

The second objective examined the psychological effects of armed conflict on students. The study found that armed conflict was significantly associated with trauma symptoms including intrusive thoughts, fear, insecurity, sleep disturbances, and emotional instability. The second hypothesis was therefore confirmed.

This result is supported by Betancourt et al. (2020), who found that conflict exposure among adolescents is strongly associated with post-traumatic stress and psychosocial distress. World Bank (2023) and Pluess (2018) also demonstrated that repeated exposure to insecurity and violence increases vulnerability to chronic psychological stress among adolescents. In humanitarian settings, the evidence remains consistent. Tol et al. (2021) emphasized that adolescents exposed to armed conflict frequently experience anxiety, fear, and trauma-related symptoms that may persist for years. Likewise, World Bank (2023) and Jordans et al. (2022) found that conflict-affected adolescents in fragile contexts show significantly higher emotional distress than those living in stable environments. The educational implications observed in this study are equally important. The findings revealed that psychological distress negatively affected attendance, concentration, and academic performance. Students with higher trauma levels were more likely to miss school, experience poor concentration in class, and report declining grades. This validates the third hypothesis.

This finding agrees with Burde et al. (2017), who reported that conflict disrupts school attendance and learning outcomes through fear and insecurity. Kelcey and Winthrop (2020) similarly found that emotional distress directly affects classroom engagement and academic achievement among conflict-affected learners.

The reduction in concentration observed in Goma also supports the conclusions of Murray et al. (2022), who showed that trauma reduces cognitive attention and academic engagement among adolescent girls. Likewise, Dryden-Person (2021) found that displaced and conflict-affected learners experience interrupted learning due to psychological distress and instability.

The gender dimension remains central. Female students were disproportionately affected both psychologically and educationally. This finding aligns with UNHCR (2016); Hossein et al. (2020) and UNESCO (2024), who demonstrated that girls in humanitarian crises are more vulnerable to violence-related psychological trauma than boys. Similarly, Stark et al. (2022) reported that adolescent girls in conflict settings face compounded educational barriers due to violence exposure and psychosocial distress.

The explanatory model developed in this study also confirms cumulative vulnerability: gender-based violence and armed conflict increase trauma symptoms, trauma symptoms reduce attendance and concentration, and reduced school participation contributes to lower academic performance. This pathway is supported by WHO (World Health Organization, 2023) and Boothby et al. (2021), who emphasized cumulative psychosocial risk in conflict environments. Snider et al. (2020) also concluded that trauma exposure often affects both mental wellbeing and educational continuity simultaneously.

Finally, the present findings reinforce the broader evidence presented by UNICEF (2023), which identified conflict, violence, and psychological distress as major barriers to girls' education in fragile settings. The results also agree with UNESCO (2024), which reported that insecurity and violence continue to undermine girls' school participation and academic success in conflict-affected regions.

Overall, this study contributes important empirical evidence from Goma by confirming that gender-based violence and armed conflict produce measurable psychological distress and directly compromise educational outcomes among female students. The results emphasize the urgent need for integrated psychosocial and educational interventions for girls living in conflict-affected communities.

CONCLUSION

This study concludes that gender-based violence and armed conflict significantly shape psychological wellbeing and educational outcomes among female students in Goma. Exposure to violence and insecurity was found to increase psychological distress, which in turn negatively affects attendance, concentration, and academic performance. The findings highlight a cumulative

effect where both forms of violence reinforce trauma and deepen educational disruption. Overall, the results confirm that learning outcomes in conflict-affected settings are strongly dependent on students' psychosocial wellbeing. These insights underscore the need for integrated approaches that address both protection and mental health within the education system. Strengthening supportive and safe learning environments is therefore essential for improving both psychological recovery and academic success in eastern Democratic Republic of Congo.

In light of these findings, strengthening school-based psychosocial support services should be prioritized to provide counseling and trauma-informed care for affected students, while educational institutions and local authorities reinforce gender-sensitive protection and reporting mechanisms to prevent violence and ensure timely assistance to survivors. Public institutions and humanitarian partners should invest in safe and resilient learning environments that sustain educational continuity in conflict-affected settings. However, this study was limited by its cross-sectional design, self-reported data, and its focus on female students in Goma, which restricts causal interpretation and generalizability. Future research should adopt longitudinal designs to better capture long-term psychological and academic effects, include both male and female students for comparative analysis, and apply mixed-method approaches to deepen understanding of lived experiences.

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