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Perceived Safety, Risk, and Violence Exposure among Schoolchildren: A Psychosocial Analysis of Factors Shaping School Safety

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School safety is a multidimensional phenomenon shaped by students' perceptions of safety, appraisals of risks, and exposure to violence. This study examined the interrelationships among these dimensions, their contribution to overall school safety, group differences, and associations with academic achievement among schoolchildren in Kosovo. A cross-sectional quantitative survey was conducted with 299 students aged 11–18 from Grades 6–12 across 20 public schools. Students generally reported relatively high perceived safety and comparatively low levels of risk and violence exposure. Greater perceived risk and violence exposure were associated with poorer overall safety, while stronger situational safety was associated with more favourable safety perceptions. The final regression model explained 33.9% of the variance in overall safety, with situational safety, multifactor risk, and spatial violence exposure emerging as particularly important predictors. ANOVA results showed that female students reported higher levels of several risk and violence-exposure dimensions, whereas grade-level differences were more extensive; no significant differences emerged by settlement area. Safety, risk, and violence exposure did not significantly predict academic achievement. Mediation analysis identified a significant indirect association between violence exposure and perceived safety through perceived risk. Findings support a student-centred, multidimensional approach integrating violence prevention, psychosocial support, and systematic monitoring of students' safety experiences.

Keywords: school safety, perceived safety, perceived risk, violence exposure, group differences

Introduction

School safety is widely recognized as a fundamental prerequisite for ensuring quality education, promoting children's well-being, and enabling positive learning outcomes. Inclusive, equitable and safe learning environments for all children are highlighted in Sustainable Development Goal (SDG) 4 (United Nations, 2015). Similarly, the United Nations Educational, Scientific and Cultural Organization (UNESCO) considers safe and supportive schools as essential to children's cognitive, social and emotional development (UNESCO, 2019). School safety is not simply about protecting students from physical harm, but also from bullying, violence, harassment, discrimination, abuse and other threats to their psychological

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well-being. Students who perceive their school environment as safe are more likely to exhibit higher academic achievement, greater school engagement, better attendance and improved mental health than students who experience unsafe school environments (Aldridge & McChesney, 2018; Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013).

School safety is a multidimensional construct. Physical, psychological, emotional, and social dimensions together shape children's educational experiences. The World Health Organization (WHO, 2020) states that safe schools need secure physical infrastructure and emergency preparedness, but also positive interpersonal relationships, effective supervision, inclusive school climates, and supportive teacher-student interactions. Research consistently shows that positive school climates with respect, fairness and connectedness reduce violence, improve students' sense of belonging and promote academic and psychosocial development (Cohen, McCabe, Michelli, & Pickeral, 2009; Wang & Degol, 2016).

Violence against children remains a major global concern, prompting increasing international efforts to create safer school environments. According to the WHO (2020), nearly half of children worldwide experience physical, emotional, or sexual violence each year, representing approximately one billion children aged 2–17 years. In educational institutions, UNESCO (2019) reported that globally, around one in three students (32%) had been bullied by peers at least once in the past month, about 36% had been involved in physical fights and 32% had been physically attacked. School violence is associated with poor educational outcomes, increased absenteeism, school dropout, anxiety, depression, and adverse long-term social and health consequences (UNESCO, 2019; WHO, 2020).

The situation in Kosovo mirrors many of these global concerns. National evidence indicates that violence continues to be a major issue affecting children's educational experiences. The Multiple Indicator Cluster Survey (MICS) conducted by the Kosovo Agency of Statistics and UNICEF found that about 70% of children aged 1-14 years had been exposed to some form of violent discipline by caregivers, highlighting the wider societal context in which children grow up (Kosovo Agency of Statistics & UNICEF, 2020). In schools specifically, the national study Violence Against Children in Kosovo found that approximately 59% of students had been subjected to psychological violence, primarily in the form of verbal abuse, insults, threats or the destruction of personal property. Significant proportions also reported experiences of peer exclusion and other forms of social violence (KOMF & UNICEF, 2017). Such experiences undermine students' emotional security, diminish their sense of belonging, and negatively affect learning, mental health, and school participation.

To address these issues, comprehensive and coordinated school safety systems that include prevention, protection, early identification, as well as timely intervention are needed. International frameworks recommend that schools establish clear safety policies, multidisciplinary school-safety teams, emergency preparedness procedures, and evidence-based violence-prevention programs that actively involve students, teachers, parents and local communities (UNESCO, 2019; WHO, 2020). Preventive strategies including social-emotional learning, restorative practices, conflict resolution, and anti-bullying interventions have been identified as effective for reducing violence

and improving school climate and student well-being (Durlak et al., 2011; UNESCO, 2019). Consequently, school safety should be understood as a collaborative and systemic process in which educational institutions, families, communities, and policymakers share responsibility for creating learning environments characterized by security, inclusion, trust, and mutual respect. Moreover, there is limited empirical evidence examining how perceived safety, perceived risk, and violence exposure interact as distinct but interrelated dimensions of school safety. Addressing this gap is therefore a central aim of the present study.

Literature Review

Conceptualizing School Safety

School safety has moved from a narrow focus on physical security to a holistic construct involving psychological, social and emotional aspects (Ben-Arieh et al., 2001). Safety is viewed as a basic condition for learning and a major indicator of school quality in modern education systems. It encompasses objective factors such as infrastructure and supervision, as well as students' subjective perceptions of safety across different environments. A safe school is not just one in which violence does not occur, but one that has an atmosphere of trust, inclusion and respect. This is particularly important in secondary schools, where adolescents may experience heightened social pressures, increasingly complex peer dynamics, and greater emotional vulnerability. Child maltreatment and school violence are now recognized as major public health concerns with long-term psychological and economic consequences worldwide (Hillis, Mercy, Amobi, & Kress, 2016). Research suggests that students exposed to hostile school environments are more likely to experience anxiety, depression, and reduced engagement with learning (Pellegrini & Long, 2002).

Dimensions and Typologies of Violence in Schools

Violence at school is a multidimensional phenomenon that includes physical, psychological and social forms:

- Physical violence involves the use of force that causes pain or injury.
- Psychological violence means verbal aggression, intimidation, humiliation and manipulation that damage emotional health.
- Social violence is behaviour or circumstances that damage a person's social connections, sense of inclusion, or status, often through marginalization or bias.

International and local studies (Agani-Destani, Hoxha, & Kelmendi, 2015) have confirmed that these forms often co-occur, creating a complex network of risks that can affect both victims and witnesses. Bullying and cyberbullying are particularly detrimental to a person's psychological safety, as Escuadra, Magallanes, Lee, and Chung (2023) associate these experiences with anxiety, depression, and

social isolation. Thus, schools need to address violence not as isolated incidents but as outcomes of wider social, cultural and institutional dynamics, including power relations, gender norms and the influence of digital technologies.

The Context of School Violence in Kosovo

In Kosovo, research on school violence and bullying has expanded notably in the last decade, reflecting greater institutional attention to child protection. Studies by Gallopeni (2020), Kelmendi et al. (2023) and Kelmendi, Arënliu, and Konjufca (2024) reveal that bullying is pervasive across secondary schools, manifesting as verbal aggression, social exclusion, and persistent psychological harassment. Victims often refrain from reporting incidents due to fear of threats, stigma or distrust in school institutions. These findings are compounded by the challenges of limited resources, weak enforcement of preventive mechanisms, and a social context marked by post-conflict transition and economic uncertainty. Millaku, Tasevska, Celcima, and Kraja-Bardhi (2025) emphasize gender disparities, showing that girls report higher levels of fear and insecurity, whereas boys exhibit more overtly aggressive behaviours. Similarly, Krasniqi, Vazsonyi, & Cakirpaloglu (2024) link bullying to mental health issues such as anxiety and depression, especially during adolescence.

The Law on Pre-University Education in Kosovo specifically mandates educators to prevent physical and psychological harm (Article 4) and assigns municipalities responsibility for coordinating responses to violence (Article 7). Despite this, implementation remains inconsistent, highlighting the gap between policy and practice. Thus, local literature presents school violence in Kosovo as a multifactorial dimension embedded in the country's social transition and requiring community-wide interventions, teacher training, and stronger institutional accountability.

International Evidence and Comparative Insights

There are useful comparative insights from global research. La Salle-Finley, Yang, Espelage, and Jimerson (2024) reported that social-emotional learning programs can contribute to reducing bullying and improving school climate. Hinduja and Patchin (2012) highlighted the growing importance of cyberbullying and digital environments as contexts for psychological violence. Brett, Cooper, Smith, and Jones Bartoli (2024) found that strong caregiver and teacher relationships buffered the effects of victimization, underscoring the importance of social support. Gaffney, Ttofi, and Farrington (2021), in an updated systematic review and meta-analysis, found that school-based anti-bullying programs can significantly reduce both bullying perpetration and victimization. Finally, Hymel and Darwich (2018) conceptualize education as a mechanism for peacebuilding, arguing that schools are not only places of learning but also environments for developing empathy, cooperation, and social cohesion, making them a particularly relevant framework in post-conflict societies such as Kosovo, and the Western Balkans in general.

Theoretical Framework: Perceived Safety, Perceived Risk, and Violence Exposure

Empirical research has addressed school safety through multi-faceted constructs, such as perceived safety, perceived risk, and violence exposure indices.

Perceived Safety Index (PSI)

Perceived safety is defined as students' subjective sense of feeling safe at school (Ben-Arieh et al., 2001). It also includes the feeling of safety in classrooms, hallways, playgrounds, and while traveling to and from school. Higher PSI scores have been found to be associated with more positive school climates, less self-reported victimization, and better psychosocial well-being (Lunetti et al., 2022). Cross-national studies (Ahn & Yoo, 2025) also show that students from safer school environments report higher overall well-being, affirming the strong link between perceived safety and developmental outcomes.

Perceived Risk Index (PRI)

Perceived risk refers to students' subjective assessment of the likelihood of experiencing harm, victimization, violence, or unsafe situations within the school environment, shaped by individual, social, and contextual school factors (Shumow & Lomax, 2001). PRI items typically capture students' evaluation of hazards such as harassment, theft, or assault in specific settings. Surveys such as Indicators of School Crime and Safety (NCES, 2024) employ similar constructs to highlight demographic and contextual differences in perceived risk. Evidence consistently shows that students with greater risk and insecurity in school report lower emotional security, school belonging, and psychosocial adjustment (Allen et al., 2018; Kalkan & Dağlı, 2021; Nijs et al., 2014; Chen, Huang, Peng, & Hu, 2025).

Violence Exposure Index (VEI)

The Violence Exposure Index reflects students' direct or indirect experience with violent events. Measures such as the Juvenile Victimization Questionnaire (JVQ-R2) (Mathews et al., 2023) and the Violence Exposure and Trauma Screener for Youth (VETSY) (Flannery et al., 2024) have shown strong validity in assessing these experiences. Violence exposure has been associated with both perceived risk and perceived safety, suggesting a potential pathway linking VEI, PRI, and PSI to broader outcomes such as well-being and school engagement. These constructs are best regarded as complementary parts of an integrated model for the assessment of school safety.

Synthesis and Research Gap

The literature reviewed suggests that school safety is a multidimensional construct that includes physical conditions, social relations, psychological perceptions, and institutional mechanisms. Both international and Kosovo-based evidence suggests

that violence and bullying are ongoing threats to children's safety and learning gains. However, important gaps remain, particularly regarding empirical research on the relationships among perceived safety, perceived risk, and violence exposure in developing and transitional contexts. Previous studies have focused on individual aspects of bullying and violence, but few have examined the interrelationships between these phenomena using standardized indices such as PSI, PRI, and VEI. Addressing this gap is crucial to develop evidence-based interventions and to inform national policies that aim at making schools places of well-being, inclusion and peacebuilding.

Study Objectives

This study aims to address the safety phenomenon in the pre-university school settings in a developing country. School safety is examined through three interrelated dimensions: perceived safety, perceived risk, and violence exposure, within a multidimensional conceptual framework. Furthermore, the study examines students' experiences and responses to safety risks and violence both within school settings and while travelling between home and school.

The study seeks to provide an empirical and conceptual understanding of how these constructs jointly shape students' overall sense of safety in the school environment, both within school premises and along their routes to and from school. By doing so, the research aims to identify contextual, psychological, and social determinants of school safety and to generate evidence-based insights that can inform school policies, preventive programs, and interventions aimed at promoting a safer, more inclusive, and supportive learning climate for all students.

In achieving these aims, the study focuses on the following research questions:

1. How do students' perceptions of safety, risk, and exposure to violence interrelate in shaping their overall sense of school safety?
2. To what extent do perceived safety, perceived risk, and violence exposure predict students' overall feelings of safety in school environments?
3. Are there statistically significant differences in perceived safety, perceived risk, and exposure to violence between: a) male and female students, b) lower and upper secondary students, and c) urban, suburban, and rural school environments?
4. Are perceived safety, perceived risk, and violence exposure associated with students' academic achievement?
5. Is the association between violence exposure and perceived safety statistically mediated by perceived risk, such that greater violence exposure is associated with heightened perceived risk, which in turn is associated with lower perceived safety?

Methodology

Study Design

This study uses a cross-sectional, quantitative survey design to investigate students' perceptions of safety, perceived risks, and exposure to violence in schools. The design was selected to capture the self-reported experiences, perceptions, and behaviors of students at a single time point, enabling both descriptive summaries and inferential analyses of relationships between constructs. The study employed both exploratory and explanatory quantitative analyses. The exploratory component provides an overall description of school safety and examines key factors associated with students' safety experiences. The explanatory component examines relationships among key school-safety variables and group differences according to gender, grade level, and settlement area. Finally, the study examines associations between school-safety variables and students' academic performance.

The combination of these approaches was selected because school safety cannot be adequately represented through a single indicator or through reported incidents alone. Examining perceptions of safety, appraisal of environmental risks, and exposure to different forms and locations of violence allowed the study to capture complementary dimensions of students' lived safety experiences. At the same time, the quantitative design permitted statistical examination of associations, predictors, and group differences across these dimensions. However, because the study was cross-sectional and non-experimental, the explanatory analyses concern statistical relationships and predictive associations rather than causal effects.

Participants and Sampling

The target population consisted of students enrolled in grades 6–12 in public schools. Participants' age range was between 11 to 18 years ($M = 14.5$ years, $SD \approx 1.8$). The study was conducted within an OSCE (Organization for Security and Cooperation in Europe) programme in Kosovo supporting school-safety measures and interventions at the lower- and upper-secondary levels. Targeting this age group enabled the study to capture the perspectives of adolescents who are old enough to self-report reliably on experiences of safety and risk.

A stratified random sampling method was applied to ensure representation across gender, age, level of grades, settlement area, and level of education. Within each stratum, schools were randomly selected, and within selected schools, classrooms were chosen to participate. Students were selected in 20 schools, of which 15 were schools providing primary and lower secondary education, and 5 schools providing upper secondary educations. Of the 20 participating schools, eight were located in rural areas.

As shown in Table 1, the study sample included 299 students. Females represented 60.9% of the sample. Of the 293 students who reported their grade, 41.3% were in lower secondary (Grades 6–9) and 58.7% in upper secondary (Grades 10–12), with Grade 12 being the largest group (26.6%). 55.5% of students resided in urban areas at or near the center, 26.4% resided in suburban urban areas, and 18.2%

resided in rural areas. Over 87% of them reported their academic performance as "very good" or "excellent." Approximately one in five students traveled more than 4 km to school.

Table 1. Distribution of Participants by Gender, Grade, and Place of Residence

Sample category	**Sub-category**	**n**	***%***
Gender	Female	182	*60.9*
	Male	117	*39.1*
	Total	**299**	***100***
Education Level			
Lower Secondary (Grades 6–9)	Grade 6	29	*9.9*
	Grade 7	27	*9.2*
	Grade 8	32	*10.9*
	Grade 9	33	*11.3*
Subtotal	***6–9***	***121***	***41.3***
Upper Secondary (Grades 10–12)	Grade 10	40	*13.7*
	Grade 11	54	*18.4*
	Grade 12	78	*26.6*
Subtotal	***10–12***	***172***	***58.7***
Total	**6–12**	**293**	***100***
Place of residence	City – central/near center	162	*55.5*
	City – periphery	77	*26.4*
	Rural	53	*18.2*
	Total	**292**	***100***

Data Collection Instruments and Measures

Data were collected using a structured questionnaire specifically developed for this study. The instrument consisted of demographic questions, followed by clusters of items corresponding to the three main constructs: Perceived Safety, Perceived Risk, and Violence Exposure. Items were rated on 4- or 5-point Likert-type scales. Additional variables included demographics (gender, grade, place of residence, academic performance, education of parents and distance from home to school).

Table 2. Internal Consistency of Key Variables and Composite Indices

Index / Variable	**Subscale**	**Item Focus & Examples**	**Reliability (α)**
Perceived Safety Index (PSI)	Situational (PSI1)	Safety in different situations: going to school, returning home, during class, during breaks, school events (5 items)	.73
	Spatial (PSI2)	Safety in physical areas: classrooms, corridors, toilets, labs, cafeteria, sport, yard, parking lot (8 items)	.91
	Overall safety	Global rating of school safety* (1 item)	-
Perceived Risk Index (PRI)	Hazards (PRI1)	Risks from stray animals, traffic, harassment, robbery, poor lighting, unsafe food, construction zones, weather (9 items)	.83

Index / Variable	Subscale	Item Focus & Examples	Reliability (α)
	Substance environments (PRI2)	Risky places associated with drug/alcohol use (toilets, corridors, parks, cafés, etc.) (7 items)	.86
	Ease of access (PRI3)	Perceptions of ease of obtaining tobacco, alcohol, drugs, weapons (5 items)	.89
Violence Exposure Index (VEI)	Incidents (ViExin1)	Exposure to punishments, fights, theft, vandalism, insults, harassment, drug use, weapon carrying (34 items)	.87–.90
	Spatial mapping (ViExin2)	Likelihood of violence in different places (corridors, toilets, cafeteria, sport, yard, etc.) (31 items)	.92–.93
	Substance/weapon environment (ViExin3)	Peer prevalence and environmental indicators of substance use/weapon carrying (18 items)	.86

*Coded on 5 categories from "Very safe" to "Very uncertain"; lower means indicate *greater* safety. Overall safety was assessed using a single item; therefore, internal consistency reliability (Cronbach's α) is not applicable.

The internal consistency of the multi-item scales and subscales used to construct the study indices was examined using Cronbach's alpha (α). As shown in Table 2, alpha coefficients for the multi-item measures ranged from .73 to .93, indicating acceptable to excellent internal consistency. The situational safety subscale (PSI1; $\alpha = .73$) demonstrated satisfactory reliability, while the spatial safety subscale (PSI2; $\alpha = .91$) demonstrated excellent internal consistency. The three PRI subscales: multifactor hazards (PRI1; $\alpha = .83$), substance-related environments (PRI2; $\alpha = .86$), and ease of access (PRI3; $\alpha = .89$), also showed good internal consistency. Reliability was similarly strong across the VEI dimensions, with coefficients ranging from $\alpha = .77$ to .93. The overall school-safety measure consisted of a single global item; therefore, Cronbach's alpha was not calculated for this measure. Overall, the multi-item scales demonstrated satisfactory internal consistency for subsequent analyses, which exceeded the commonly accepted threshold of $\alpha \geq .70$ for psychological research (Nunnally & Bernstein, 1994), confirming the internal consistency and measurement reliability of the scales.

Procedure & Ethical Considerations

Data were collected using two modes. For students aged 11–15 years (Grades 6–9), data were collected using a paper-and-pencil format. A team of school psychologists was trained on the data collection methodology for this type of survey, which conducted field data collection in the selected schools, through a one-to-one interview with children. For students aged 16–18 years, the questionnaire was administered online through school communication channels.

Ethical measures were ensured in several steps. First, permissions were obtained from the Ministry of Education and relevant school administrations. Second, written informed consent was obtained from parents/caregivers, and assent was secured from students coming from 11-15 age groups. For students belonging

to 16-18 age group with whom online questionnaire administration was conducted, the parental consent and student assent was ensured by placing the information at the beginning of the online questionnaire, requiring them to agree with their parents before they started to fill in the questionnaire, as well as to provide assent by reading, understanding and clicking on relevant boxes. All participants were informed that their identities would remain anonymous and that their responses would be treated confidentially.

Data Analysis and Results

Overview of Data Analysis

Data analyses were structured according to the five research questions formulated for the study, respectively the analyses examined: (1) relationships among perceived safety, perceived risk, violence exposure, and overall school safety; (2) the extent to which socioeconomic/educational characteristics and the different dimensions of PSI, PRI, and VEI predict overall school safety; (3) differences in safety, risk, and violence exposure according to gender, grade level, and settlement; (4) the relationship between school-safety experiences and academic achievement; and (5) the possible indirect relationship between violence exposure, perceived risk, and perceived safety.

Data analyses were conducted using IBM SPSS Statistics 26. Preliminary data screening examined missing values, distributions, normality, and potential outliers. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were then calculated to describe the sample and the main study variables. Internal consistency of the Perceived Safety Index (PSI), Perceived Risk Index (PRI), and Violence Exposure Index (VEI) dimensions was assessed using Cronbach's alpha (α). Pearson correlations were used to examine associations among the PSI, PRI, and VEI dimensions and students' overall perceived school safety. Correlations between the composite indices and their constituent items were also examined as evidence of internal construct coherence. To address the predictive research questions, stepwise multiple regression analyses were conducted with overall perceived school safety as the dependent variable. Predictors were considered sequentially across conceptually defined groups: (1) socioeconomic and educational characteristics (grade level, academic achievement, father's education, and mother's education), (2) PSI dimensions, (3) PRI dimensions, and (4) VEI dimensions. Within each group, stepwise selection was applied to identify predictors providing significant additional explanatory value. Model fit was evaluated using R, R^2, adjusted R^2, changes in R^2, the overall F test, and standardized regression coefficients (β). Separate exploratory regression analyses examined whether PSI, PRI, and VEI dimensions predicted students' academic achievement. Finally, one-way analyses of variance (ANOVAs) were conducted to examine differences in perceived safety, perceived risk, and violence exposure according to gender, grade level, and settlement area (urban/city center, suburban/peripheral, and rural). Homogeneity of variance was assessed using Levene's test; where this assumption was violated, Welch's robust ANOVA was considered. Significant omnibus differences involving more than two groups were

followed by appropriate post-hoc comparisons to identify specific group differences. Effect sizes were expressed using eta squared (η^2). Statistical significance was evaluated at $p < .05$ throughout.

Research Question 1: How Do Students' Perceptions of Safety, Risk, and Exposure to Violence Interrelate in Shaping their Overall Sense of School Safety?

Table 3 presents descriptives (N, mean and SD) as well as correlation analysis for the main indices of school safety. Descriptive statistics indicated that students generally reported relatively positive perceptions of school safety. Situational perceived safety (PSI1) was relatively high ($M = 3.84$, $SD = 0.80$), as was spatial perceived safety (PSI2; $M = 3.82$, $SD = 0.62$). Perceptions of multifactor hazards were moderate (PRI1: $M = 2.44$, $SD = 0.81$), whereas perceived substance-related risk (PRI2: $M = 1.76$, $SD = 0.70$) and contextual/access-related risk (PRI3: $M = 2.04$, $SD = 1.07$) were lower. Violence-exposure scores were also comparatively low, ranging from $M = 1.85$ for substance/weapon-related environments to $M = 2.16$ for spatial exposure.

The Pearson correlational analysis nevertheless demonstrated meaningful relationships among the different dimensions of school safety. Situational perceived safety was significantly negatively associated with the overall safety item ($r = -.37$, $p < .01$). Because lower values on the overall safety item indicate greater perceived safety, this negative relationship means that students reporting stronger situational safety also tended to report a more favourable overall assessment of school safety. Multifactor perceived risk was positively associated with poorer overall safety ($r = .38$, $p < .01$), while physical/verbal violence exposure was similarly associated with poorer overall safety ($r = .37$, $p < .01$).

The correlations between the dimensions themselves further support the multidimensional nature of school safety. Situational safety was negatively associated with multifactor perceived risk ($r = -.32$), while multifactor risk was positively related to substance-related risk ($r = .32$) and physical/verbal violence exposure ($r = .47$). Particularly strong relationships occurred among some of the violence-exposure dimensions. Spatial violence exposure correlated strongly with physical/verbal exposure ($r = .76$), while substance/weapon environmental exposure correlated with several other risk and exposure measures, including contextual risk ($r = .82$).

Taken together, these findings answer RQ1 by showing that perceived safety, perceived risk, and violence exposure are related but distinct components of students' school-safety experiences. Students who perceive more hazards and experience greater exposure to violence generally feel less safe, whereas stronger situational safety is associated with a more favourable overall assessment of school safety. The results therefore support a multifaceted rather than unidimensional conceptualization of school safety: students' overall sense of safety reflects the combined influence of subjective safety perceptions, perceived environmental risks, and lived or observed exposure to violence. The direction and strength of correlations support a multifactorial framework of school safety consistent with prior studies (Ahn & Yoo, 2025; Mathews et al., 2023; Van der Helm et al., 2024).

Table 3. Descriptives and Pearson Correlations of Overall Safety with Major Indices

Construct	N	Mean	SD	1	2	3	4	5	6	7	8
1. Perceived Safety – situational	299	3.84	.80								
2. Perceived Safety – spatial	236	3.82	.62	-.002							
3. Perceived Risk – multifactor hazards	298	2.44	.81	-.32**	.11						
4. Perceived Risk – drugs/alcohol places	299	1.76	.69	-.12*	.05	.32**					
5. Perceived Risk – access/ease	296	2.04	1.07	.05	.12	.13*	.34**				
6. Violence Exposure – physical/verbal incidents	299	1.86	.51	-.11	.08	.47**	.58**	.43**			
7. Violence Exposure – spatial mapping	299	2.16	.77	-.10	.14*	.38**	.67**	.44**	.76**		
8. Violence Exposure – substance/weapon environment	299	1.85	.63	-.04	.13*	.30**	.75**	.82**	.69**	.70**	
9. Overall safety (single item)	297	2.09	.80	-.37**	012†	.38**	.25**	-0.02	.37**	.27**	.16**

*$p < .01$.
**$p < .001$.
†$p = .058$

Research Question 2: To What Extent Do Socioeconomic Characteristics, Perceived Safety, Perceived Risk, and Violence Exposure Predict Students' Overall Feelings of School Safety?

A stepwise multiple regression was conducted to examine whether socioeconomic/educational characteristics, perceived safety (PSI), perceived risk (PRI), and violence exposure (VEI) predicted students' overall feelings of safety at school and in the surrounding school area, as presented in Table 4. Lower scores on the dependent variable indicated greater perceived safety; therefore, negative coefficients represent associations with greater safety and positive coefficients with lower safety. Predictors were considered in four conceptually ordered groups: (1) grade, academic achievement, father's education, and mother's education; (2) PSI1 and PSI2; (3) PRI1–PRI3; and (4) VEI1–VEI3. Within each group, stepwise selection was applied using $p \leq .05$ for entry and $p \geq .10$ for removal.

Among the socioeconomic and educational variables, only mother's education entered the model, explaining 4.2% of the variance in overall safety, $R^2 = .042$, $F(1, 215) = 9.45$, $p = .002$. Grade, academic achievement, and father's education did not meet the criterion for entry. The addition of situational perceived safety (PSI1) substantially increased explained variance to 18.6% ($\Delta R^2 = .144$, $p < .001$), while spatial perceived safety (PSI2) contributed a further 1.5%, bringing R^2 to .201. Thus, students' immediate perceptions of safety, particularly situational safety, contributed considerably more to overall safety than socioeconomic characteristics.

Within the perceived-risk domain, multifactor perceived risk (PRI1) increased explained variance from 20.1% to 28.3% ($\Delta R^2 = .082$, $p < .001$), and substance-related risk (PRI2) added a further 1.9% ($\Delta R^2 = .019$, $p = .018$). PRI3 did not meet the criterion for inclusion. In the final VEI block, spatial violence exposure (VEI2)

contributed an additional 2.0% ($\Delta R^2 = .020$, $p = .013$), followed by substance/ weapon environmental exposure (VEI3), which added approximately 1.7%. Physical/verbal violence exposure (VEI1) was not retained. The final seven-predictor model explained 33.9% of the variance in overall school safety, $R = .583$, $R^2 = .339$, adjusted $R^2 = .317$, $F(7, 209) = 15.35$, $p < .001$.

Table 4. Stepwise Multiple Regression Predicting Students' Overall Perceived School Safety

Step	Predictor entered	R^2	Adj. R^2	ΔR^2	Final *B*	Final *SE B*	Final β	*p*
1	Mother's education	.042	.038	.042	−0.058	0.045	−.076	.202
2	PSI1 – Situational safety	.186	.178	.144	−0.261	0.063	−.265	< .001
3	PSI2 – Spatial safety	.201	.190	.015	0.104	0.069	.086	.134
4	PRI1 – Multifactor risk	.283	.270	.082	0.177	0.062	.197	.004
5	PRI2 – Substance-related risk	.302	.286	.019	0.222	0.114	.200	.053
6	VEI2 – Spatial violence exposure	.322	.303	.020	0.253	0.081	.262	.002
7	VEI3 – Substance/weapon environment	.339	.317	.017	−0.293	0.126	−.245	.021

Note. *B* = unstandardized coefficient; *SE B* = standard error; β = standardized coefficient; ΔR^2 = incremental variance explained at each step. Final coefficients refer to Model 7. Grade, academic achievement, father's education, PRI3, and VEI1 were not retained by the stepwise procedure. Lower scores on the dependent variable indicate greater overall perceived safety. Final model: $F(7, 209) = 15.35$, $p < .001$, $R^2 = .339$, adjusted $R^2 = .317$.

In the final model, four variables remained statistically significant independent predictors. Situational perceived safety (PSI1) was negatively associated with the overall safety score ($\beta = -.265$, $p < .001$), indicating that students who felt safer in everyday school situations also reported greater overall school safety. Multifactor perceived risk (PRI1) predicted poorer overall safety ($\beta = .197$, $p = .004$), as did spatial violence exposure (VEI2) ($\beta = .262$, $p = .002$). VEI3 was also significant but showed a negative coefficient ($\beta = -.245$, $p = .021$); given the substantial overlap among risk and violence-exposure indicators, this inverse coefficient should be interpreted cautiously as potentially reflecting shared variance or a suppression effect rather than a protective effect of exposure. Mother's education, PSI2, and PRI2 were no longer significant after the full set of retained predictors was considered.

Overall, the findings show that students' direct perceptions and experiences of the school environment were substantially more important predictors of overall safety than socioeconomic and educational characteristics. Socioeconomic factors initially accounted for only 4.2% of the variance, whereas the successive inclusion of PSI, PRI, and VEI variables increased explained variance to approximately 34%. In particular, situational safety, multifactor risk, and spatial violence exposure emerged as important independent predictors. The findings therefore support a multidimensional understanding of school safety in which students' overall sense of

security is shaped primarily by how safe they feel in everyday school situations, the risks they perceive, and their exposure to unsafe environments.

Research Question 3: Are There Significant Differences in Perceived Safety, Risk, and Exposure to Violence by Gender, Grade Level, and Settlement Area?

A series of one-way ANOVAs examined differences in perceived safety (PSI), perceived risk (PRI), and violence exposure (VEI) by gender, grade level, and settlement area. Levene's test was used to assess homogeneity of variance; where this assumption was violated, Welch's robust test was considered. Significant grade effects were further examined using post-hoc comparisons.

As pictured in Table 5, gender differences were evident primarily for perceived risk and violence exposure. Female students reported significantly higher multifactor perceived risk (PRI1) ($M = 2.60$, $SD = 0.79$) than males ($M = 2.18$, $SD = 0.78$), $F(1, 296) = 20.07$, $p < .001$, $\eta^2 = .063$. Females also reported higher substance-related risk (PRI2), $F(1, 297) = 4.87$, $p = .028$, $\eta^2 = .016$; physical/verbal violence exposure (VEI1), $F(1, 297) = 7.07$, $p = .008$, $\eta^2 = .023$; and spatial violence exposure (VEI2), $F(1, 297) = 5.37$, $p = .021$, $\eta^2 = .018$. No significant gender differences were observed for situational safety (PSI1), contextual risk (PRI3), substance/weapon exposure (VEI3), and for overall school safety. Spatial safety (PSI2) was at the conventional significance boundary ($p = .050$). Overall, gender effects were small, except for multifactor risk, which showed a moderate effect.

Grade level produced broader differences. Situational safety (PSI1) differed significantly across grades, $F(6, 286) = 7.08$, $p < .001$, $\eta^2 = .129$, with lower safety particularly evident among students in the upper grades. Post-hoc comparisons showed that Grade 11 students reported significantly lower situational safety than students in Grades 6, 7, 8, 9, and 12, while Grade 10 students scored significantly lower than Grade 9 students. A significant grade-level effect was found for contextual risk (PRI3), $F(6, 283) = 6.19$, $p < .001$, $\eta^2 = .116$. Because the homogeneity-of-variance assumption was violated, Welch's robust test was also examined and confirmed the significant grade-level effect, Welch's $F(6, 110.38) = 9.38$, $p < .001$. Contextual risk generally increased across grade levels, from $M = 1.32$ in Grade 6 to $M = 2.51$ in Grade 12.

Grade differences were also significant for physical/verbal violence exposure (VEI1), $F(6, 286) = 2.70$, $p = .014$, $\eta^2 = .054$; spatial violence exposure (VEI2), $F(6, 286) = 2.46$, $p = .024$, $\eta^2 = .049$; and substance/weapon environmental exposure (VEI3), $F(6, 286) = 5.01$, $p < .001$, $\eta^2 = .095$. These patterns generally indicated greater exposure among students in higher grades. In contrast, grade differences were not significant for PSI2, PRI1, PRI2, or overall school safety.

Table 5. One-Way ANOVA Results for Safety, Risk, and Violence Exposure by Gender, Grade Level, and Settlement Area

Outcome	Gender $F(1, df)$	p	η^2	Grade $F(6, df)$	p	η^2	Settlement $F(2, df)$	p	η^2
PSI1 – Situational safety	3.48	.063	.012	7.08	< .001	.129	0.39	.676	.003
PSI2 – Spatial safety	3.89	.050	.016	1.82	.097	.046	0.72	.486	.006
PRI1 – Multifactor risk	20.07	< .001	.063	0.51	.801	.016	0.20	.816	.001
PRI2 – Substance-related risk	4.87	.028	.016	1.38	.221	.028	0.94	.393	.006
PRI3 – Contextual risk	0.14	.711	< .001	6.19	< .001	.116	1.90	.151	.013
VEI1 – Physical/verbal exposure	7.07	.008	.023	2.70	.014	.054	0.40	.674	.003
VEI2 – Spatial exposure	5.37	.021	.018	2.46	.024	.049	0.35	.703	.002
VEI3 – Substance/weapon environment	1.73	.190	.006	5.01	< .001	.095	1.44	.239	.010
Overall school safety	2.25	.134	.008	1.63	.140	.033	0.21	.813	.001

Note. η^2 = eta squared. $p < .05$. Degrees of freedom for the error term vary slightly across outcomes because of missing observations. Where homogeneity of variance was violated, Welch's robust test was examined; the significant grade effects for PRI3, VEI1, and VEI2 remained statistically significant under the robust test.

Settlement area showed no statistically significant differences on any PSI, PRI, or VEI dimension (all ps > .05), and effect sizes were consistently very small ($\eta^2 \leq .013$). Students from city-center, city-periphery, and rural areas therefore reported broadly comparable levels of perceived safety, risk, and violence exposure.

Overall, RQ3 indicates that differences in students' school-safety experiences are associated primarily with grade level and, to a lesser extent, gender, rather than settlement area. Female students tended to perceive greater risks and report greater exposure to some forms of violence, whereas grade-level differences showed a broader developmental pattern characterized by lower situational safety and greater contextual risk and violence exposure among older students. Importantly, these differences were domain-specific and were not reflected in significant group differences in the single overall school-safety measure. This further supports treating school safety as a multidimensional construct rather than a single uniform experience.

Research Question 4: Are Perceived Safety, Perceived Risk, and Violence Exposure Associated with Students' Academic Achievement?

Regression analyses were conducted with academic achievement in the previous year as the dependent variable and the perceived safety (PSI), perceived risk (PRI), and violence exposure (VEI) indices as predictors. The models explained only a small proportion of variance in academic achievement ($R^2 < .05$) and did not reach statistical significance (all ps > .17). None of the individual safety, risk, or violence-exposure dimensions emerged as a significant independent predictor of academic achievement. Thus, the findings do not provide evidence that variation in students' perceived safety, perceived risk, or violence exposure significantly predicts their academic performance in this sample.

These findings should not be interpreted as evidence that school safety is unrelated to academic development more generally. Rather, the relationship may be relatively small, context-dependent, or operate through intermediate mechanisms not examined in the present study. Meta-analytic evidence indicates a generally positive but modest association between school climate and academic achievement

(Demirtaş-Zorbaz, Akın-Arıkan, & Terzi, 2021), while a more recent meta-analysis found a small association for classroom climate and a moderate association for broader school climate (Erdem & Kaya, 2024). Other research has also linked students' feelings of school safety with academic and developmental outcomes (Van der Helm et al., 2024).

Evidence concerning violence similarly suggests that academic consequences may depend on the nature, severity, and context of exposure. Systematic reviews have found adverse associations between childhood violence exposure and educational outcomes, including academic achievement (Fry et al., 2018), and between family violence exposure and adolescent academic achievement (Supol, Satyen, Ghayour-Minaie, & Toumbourou, 2021). The nonsignificant effects in the present study may therefore reflect the relatively low levels of violence exposure reported in this sample, the use of previous-year overall achievement as the academic outcome, or the possibility that safety affects achievement indirectly through factors such as attendance, engagement, belonging, concentration, or psychological well-being. These mechanisms were not directly tested and warrant further investigation.

Research Question 5: Is the Association between Violence Exposure and Perceived Safety Statistically Mediated by Perceived Risk, such that Greater Violence Exposure is Associated with Heightened Perceived Risk, which in Turn is Associated with Lower Perceived Safety?

To examine whether perceived risk statistically mediated the association between violence exposure and perceived safety, a mediation analysis was conducted using Hayes' PROCESS macro for SPSS (Model 4), as shown in the Table 6. Violence exposure (VEI) was specified as the predictor (X), perceived risk (PRI) as the mediator (M), and perceived safety (PSI) as the outcome (Y). The analysis included 299 participants, and the indirect effect was evaluated using 5,000 bootstrap samples with 95% confidence intervals.

Table 6. Direct and Indirect Effects of Violence Exposure on Perceived Safety Through Perceived Risk

Effect	***B***	***SE***	***t***	***p***	**95% CI**
Path *a*: VEI → PRI	0.884	0.034	25.84	< .001	[0.817, 0.951]
Path *b*: PRI → PSI	−0.219	0.102	−2.15	.032	[−0.419, −0.019]
Total effect (*c*): VEI → PSI	−0.028	0.060	−0.46	.647	[−0.147, 0.091]
Direct effect (*c′*): VEI → PSI	0.166	0.108	1.53	.126	[−0.047, 0.379]
Indirect effect (*ab*): VEI → PRI → PSI	−0.194	0.087[a]	—	—	[−0.372, −0.028]

Note. $N = 299$. Unstandardized coefficients are reported. VEI = Violence Exposure Index; PRI = Perceived Risk Index; PSI = Perceived Safety Index.

[a] Bootstrap standard error. The indirect-effect confidence interval was based on 5,000 bootstrap samples.

Violence exposure significantly and positively predicted perceived risk (path a), B = 0.884, SE = 0.034, t = 25.84, p < .001, 95% CI [0.817, 0.951]. The mediator model was statistically significant, F(1, 297) = 667.84, p < .001, accounting for 69.2% of the variance in perceived risk (R^2 = .692).

When violence exposure and perceived risk were entered simultaneously as predictors of perceived safety, perceived risk was significantly and negatively associated with perceived safety (path b), B = −0.219, SE = 0.102, t = −2.15, p = .032, 95% CI [−0.419, −0.019]. The direct effect of violence exposure on perceived safety after accounting for perceived risk (path c′) was not statistically significant, B = 0.166, SE = 0.108, t = 1.53, p = .126, 95% CI [−0.047, 0.379].

The total effect of violence exposure on perceived safety (path c) was also not statistically significant, B = −0.028, SE = 0.060, t = −0.46, p = .647, 95% CI [−0.147, 0.091]. Importantly, however, the bootstrapped indirect effect of violence exposure on perceived safety through perceived risk was statistically significant, B = −0.194, BootSE = 0.087, 95% bootstrap CI [−0.372, −0.028]. Because the bootstrap confidence interval did not include zero, the findings indicate a significant indirect association between violence exposure and perceived safety through perceived risk. Specifically, greater violence exposure was associated with heightened perceived risk, which in turn was associated with lower perceived safety.

The indirect effect was negative, whereas the remaining direct effect was positive but nonsignificant, indicating an inconsistent or competitive indirect-effect pattern. Thus, the results support the hypothesized indirect pathway through perceived risk, but they should not be interpreted as evidence of a causal mediation mechanism given the cross-sectional design.

Summary of Findings

Overall, the findings demonstrate that students' school safety is a multidimensional experience shaped more strongly by their perceptions of the school environment and exposure to risk and violence than by socioeconomic background. Students generally reported relatively high perceived safety and comparatively low levels of risk and violence exposure. Nevertheless, greater perceived risk and violence exposure were consistently associated with poorer overall safety, whereas stronger situational safety was associated with more favourable safety perceptions.

The regression analysis further showed that socioeconomic and educational characteristics had limited explanatory power, while the inclusion of perceived safety, risk, and violence-exposure indicators increased the explained variance in overall safety to 33.9%. Situational safety, multifactor perceived risk, and spatial violence exposure emerged as particularly important independent predictors. Group comparisons revealed that female students reported greater perceived risk and some forms of violence exposure than males, while grade-level differences were more pronounced: students in higher grades generally reported lower situational safety and greater contextual risk and violence exposure. In contrast, settlement area was not significantly associated with any safety, risk, or violence-exposure dimension.

Perceived safety, risk, and violence exposure did not significantly predict academic achievement, suggesting that their effects on educational outcomes may

be indirect or operate through mechanisms not examined in this study. Finally, the mediation analysis identified a statistically significant indirect association between violence exposure and perceived safety through perceived risk. Greater violence exposure was strongly associated with heightened perceived risk, which in turn was associated with lower perceived safety. Although neither the total nor the direct effect of violence exposure on perceived safety was statistically significant, the bootstrapped indirect effect was significant. This pattern suggests that perceived risk represents an important statistical pathway linking violence exposure with students' subjective experience of safety.

Discussion

The present study provides an integrated picture of school safety as a multidimensional experience involving perceived safety (PSI), perceived risk (PRI), and violence exposure (VEI). Rather than representing independent phenomena, these dimensions were meaningfully interrelated: students who perceived greater environmental risks and reported greater exposure to violence generally felt less safe, while stronger situational safety was associated with more favourable overall safety perceptions. At the same time, the regression analysis showed that students' proximal perceptions and experiences of the school environment explained considerably more variance in overall safety than the socioeconomic and educational characteristics examined. Gender and particularly grade level differentiated several dimensions of safety, whereas settlement area did not. Collectively, these findings emphasize the argument that school safety should not be understood simply as the absence of physical violence or the presence of security infrastructure, but as a broader psychosocial experience involving how students interpret situations, relationships, risks, and potentially threatening environments.

This interpretation is broadly consistent with both Kosovo evidence and international research. In a large representative study of 12,040 students from 13 municipalities in Kosovo, Kelmendi et al. (2023) found that 77% reported at least one form of victimization during the previous month, with verbal victimization and pushing/grabbing considerably more prevalent than severe forms such as weapon threats. Particularly relevant to the present findings, perceptions of risky peers emerged as the strongest correlate of victimization. These findings complement the present study by showing that students' cognitive appraisal of their social environment is closely intertwined with actual experiences of violence. Earlier Kosovo evidence has likewise documented concerns about physical and psychological violence and children's safety within educational settings. Internationally, violent victimization has consistently been associated with lower perceived school safety, including in large samples of students in Grades 6–12 (Williams, Schneider, Wornell, & Langhinrichsen-Rohling, 2018). Thus, the present PSI–PRI–VEI pattern fits a broader body of evidence in which risk perception and violence exposure form important components of students' subjective experience of safety.

The regression findings provide further evidence for this interpretation. Socioeconomic and educational characteristics initially accounted for only 4.2% of

variance in overall safety, whereas adding the PSI, PRI, and VEI dimensions increased explained variance to 33.9%. Situational perceived safety, multifactor perceived risk, and spatial violence exposure were among the significant independent predictors. This finding is particularly relevant when compared with Kelmendi et al. (2023), whose Kosovo study demonstrated that school victimization was associated with a combination of individual, family, peer, and school-related factors, with risky-peer perceptions playing an especially important role. Both studies therefore point away from explanations of school safety based predominantly on demographic background and toward a social-ecological explanation, in which students' immediate interpersonal and environmental experiences are particularly consequential. This is also consistent with international evidence showing that both individual victimization and school-wide bullying are associated with students' perceptions of school safety (Chen, Zhang, Wang, & Zhang, 2021).

The group comparisons further demonstrate that school safety is not experienced uniformly. Female students reported higher multifactor and substance-related risk and greater physical/verbal and spatial violence exposure than males, although they did not differ significantly on every safety dimension or on the overall safety measure. This finding should therefore be interpreted as a gender difference in particular forms of perceived risk and exposure rather than a general female–male difference in school safety. International evidence similarly suggests that gender conditions how students experience and interpret school safety and victimization; large-scale research has found perceived safety to vary by gender and has demonstrated that the relationship between victimization and perceived safety may differ across student groups (Williams, Schneider, Wornell, & Langhinrichsen-Rohling, 2018; Chen, Zhang, Wang, & Zhang, 2021). In Kosovo, evidence concerning gender-based violence and social norms also points to the importance of gender experiences of violence and its interpretation, supporting the need for gender-sensitive rather than gender-neutral prevention strategies.

Grade-level differences were more extensive. Situational safety was generally lower among students in the upper grades, while contextual risk and several dimensions of violence exposure were higher. This pattern is compatible with Bronfenbrenner's (1994) ecological-developmental perspective: as adolescents become older, their autonomy, peer networks, mobility, and contact with environments outside direct adult supervision expand. Consequently, older students may encounter a wider range of social and environmental risks. International research similarly demonstrates that perceived school safety and its association with victimization vary across grade levels (Chen et al., 2021; Williams et al., 2018). The current findings add useful evidence from Kosovo by suggesting that the transition toward later secondary education may be associated not simply with greater exposure but also with changes in how students interpret school and surrounding environments. This supports differentiated prevention approaches for younger and older adolescents rather than assuming uniform safety needs throughout secondary education.

In contrast, no significant differences emerged by settlement area across the PSI, PRI, or VEI dimensions. This finding is noteworthy because contextual inequalities might lead to expectations of different experiences across urban, suburban/peripheral, and rural environments. The present data do not support such a distinction: within this

sample, students' immediate experiences of situations, risks, and violence appear more informative than their broad residential category. This is compatible with the broader Kosovo evidence of Kelmendi et al. (2023), which emphasizes the complexity of individual, family, peer, and school correlates rather than reducing victimization to a single geographical characteristic. However, the absence of settlement differences should not be interpreted as evidence that schools across Kosovo have equivalent resources, psychosocial services, or security conditions; these institutional characteristics were not directly compared in the present analysis.

A finding that differs somewhat from the wider literature concerns academic achievement. PSI, PRI, and VEI did not significantly predict previous-year academic performance, with the models explaining less than 5% of achievement variance. In contrast, Erdem and Kaya's (2024) meta-analysis of K–12 studies found significant associations between both classroom and school climate and achievement, with a small mean association for classroom climate and a moderate association for school climate. Similarly, Fry et al.'s (2018) global systematic review and meta-analysis across 21 countries concluded that childhood violence is associated with adverse educational outcomes, including achievement, attendance, and school completion.

Rather than contradicting this literature, the difference may reflect measurement and contextual factors. The present study assessed previous-year general achievement rather than longitudinal changes, standardized achievement, attendance, engagement, or subject-specific performance. Moreover, international evidence suggests that the effects of violence on educational outcomes can operate through several mechanisms, including school absence, cognitive functioning, and school connectedness. Thus, school safety may influence academic development indirectly through engagement, attendance, concentration, belonging, motivation, or psychological well-being, relationships that cannot be captured adequately by a single measure of previous-year grades. The current findings should therefore be interpreted as showing no detectable *direct* predictive relationship within this sample rather than demonstrating that school safety is educationally inconsequential.

Finally, the mediation analysis provides further insight into the relationship among violence exposure, perceived risk, and perceived safety, supporting for the hypothesized VEI → PRI → PSI pathway. Violence exposure strongly predicted greater perceived risk, while greater perceived risk was associated with lower perceived safety after accounting for violence exposure. Most importantly, the bootstrapped indirect effect of violence exposure on perceived safety through perceived risk was statistically significant. This finding supports the proposed role of risk perception as an important psychological pathway through which exposure to violent or unsafe environments may be associated with students' subjective sense of safety. This interpretation is theoretically consistent with evidence indicating that experiences of victimization are related to students' subjective appraisals of whether their school environment is safe (Williams, Schneider, Wornell, & Langhinrichsen-Rohling, 2018) and with Kosovo evidence showing a close relationship between perceived risky peer environments and victimization (Kelmendi et al., 2023). Notably, the direct and indirect effects were opposite in direction, indicating an inconsistent or competitive indirect-effect pattern rather than a simple direct relationship. The finding therefore highlights the importance of distinguishing

students' exposure to unsafe environments from the cognitive appraisal of risk that may accompany such exposure. Because the present data are cross-sectional, however, the statistically significant indirect effect should not be interpreted as establishing temporal or causal mediation; longitudinal research is needed to determine whether violence exposure precedes changes in perceived risk and subsequent changes in perceived safety.

From a practical perspective, the convergence between the present findings and previous Kosovo research suggests that school-safety policy should address more than serious incidents or physical security. Kelmendi et al. (2023) concluded that the complexity of school victimization in Kosovo requires a multidisciplinary response, while UNICEF has emphasized schools' responsibility to protect children from physical and psychological violence. The current findings extend these recommendations by indicating that prevention should also monitor students' subjective perceptions of risk and situational safety. School-level strategies could therefore combine violence-prevention and reporting mechanisms with psychosocial support, peer mediation, student participation, supervision of identified high-risk spaces, and differentiated interventions for gender and age/grade groups. Such an approach recognizes that reducing recorded violence alone may not automatically produce a corresponding improvement in students' sense of safety.

Limitations and Directions for Future Research

Several limitations should qualify these conclusions. First, the cross-sectional design prevents causal or temporal interpretation of the mediation model; although a statistically significant indirect effect was identified, the data cannot establish whether violence exposure precedes heightened risk perception or whether these relationships are reciprocal. Second, reliance primarily on student self-reports creates potential common-method, recall, and social-desirability bias. Third, academic achievement was measured broadly through previous-year performance and may not capture more immediate educational consequences of safety. Fourth, the stepwise regression was exploratory and predictor selection may be sample-dependent.

Future research should therefore use longitudinal and multi-informant designs incorporating students, teachers, parents, and school-level administrative information. Measures of attendance, engagement, belonging, disciplinary incidents, psychological well-being, and longitudinal achievement would help clarify the mechanisms connecting safety with educational outcomes. Given the relative scarcity of evidence from developing contexts noted in Kosovo research (Kelmendi et al., 2023), comparative studies across Kosovo and other Western Balkan countries would also be valuable for distinguishing context-specific from more general patterns of school safety.

Conclusion

The study demonstrates that school safety in Kosovo is best understood as a multidimensional psychosocial phenomenon involving perceived safety, perceived

risk, and violence exposure. The three dimensions were systematically interconnected, and students' immediate perceptions and experiences of their school environment explained considerably more variation in overall safety than the socioeconomic and educational characteristics examined. The final regression model explained approximately 34% of variance in overall safety, highlighting the particular importance of situational safety, multifactor risk, and violence-related spatial experiences.

These results converge with Kosovo research showing that school victimization is common and embedded in a complex network of individual, peer, family, and school factors (Kelmendi et al., 2023), while also corresponding with international evidence linking victimization, bullying, and school climate to students' perceptions of safety (Chen, Zhang, Wang, & Zhang, 2021; Williams, Schneider, Wornell, & Langhinrichsen-Rohling, 2018). Gender and especially grade level differentiated specific dimensions of risk and violence exposure, whereas settlement area did not, emphasizing that students within the same broader geographical context can nevertheless experience school safety differently.

The absence of a significant direct association with academic achievement distinguishes the present findings from meta-analytic evidence linking school climate and violence with educational outcomes (Erdem & Kaya, 2024; Fry et al., 2018). This discrepancy points toward potentially indirect pathways involving engagement, attendance, belonging, or psychological well-being. The mediation analysis further demonstrated a statistically significant indirect association between violence exposure and perceived safety through perceived risk. Greater violence exposure was associated with heightened perceived risk, which in turn was associated with lower perceived safety. This finding identifies risk appraisal as an important statistical pathway connecting students' exposure to unsafe or violent environments with their subjective experience of school safety, although the cross-sectional design precludes causal interpretation.

Overall, the findings support a shift from a predominantly incident- or infrastructure-based understanding of school safety toward a student-centred and multidimensional approach. For Kosovo and comparable educational contexts, effective safety policy should combine violence prevention with psychosocial support, systematic monitoring of perceived risk and safety, student participation, and developmentally and gender-responsive interventions. Schools should therefore be evaluated not only according to whether serious incidents occur, but also according to whether students experience their everyday relationships, situations, and spaces as safe, predictable, and supportive.

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