



Risk and Protective Factors Associated with Sibling, Peer, and Cyberbullying Victimisation in Algeria

Habib Tiliouine¹

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Abstract

Bullying victimisation is increasingly recognised as profoundly detrimental to the healthy and balanced development of young people. However, research examining the dynamics of bullying simultaneously across home, school, and online environments remains limited, mainly in North African settings. This study investigated the prevalence and predictors of sibling, peer, and cyber victimisation among Algerian children aged 10 and 12 years ($N=1,841$, 53.3% girls). Descriptive analyses indicated high levels of sibling victimisation: 37% of participants reported repeated physical aggression from siblings and 34.2% reported verbal sibling victimisation. At school, 17.9% experienced physical peer victimisation, while verbal (33.9%) and relational victimisation (30.3%) were more common. Cyber victimisation was less prevalent but still notable, ranging from 8.1% to 10.4% across indicators. Gender differences were more pronounced in peer and cyber contexts, with boys reporting higher levels, whereas sibling victimisation showed smaller gender differences. Children with disabilities were significantly more vulnerable across all victimisation indicators. Logistic Regression analyses identified several predictors of sibling victimisation. Girls and children living with their father had higher odds of experiencing physical and verbal sibling victimisation. In contrast, positive family processes, such as shared decision-making, parental responsiveness, and spending enjoyable time together, were associated with lower levels of sibling victimisation. Loneliness emerged as a strong risk factor, while perceptions of frequent peer conflict at school increased the likelihood of sibling victimisation. Strong associations between different forms of bullying suggest that victimisation experiences are interconnected across contexts. These findings highlight the importance of family relationships, school climate, and children's emotional well-being in understanding and preventing bullying.

Keywords Bullying · Risk and protective factors · Sibling bullying · Peer bullying · Cyberbullying · Algerian children

Extended author information available on the last page of the article

Introduction

Bullying in childhood and adolescence represents a major challenge to healthy and harmonious human development. A substantial body of research has consistently demonstrated that involvement in bullying during youth can serve as an incubator for later deviant and potentially criminal behaviour (e.g., Wolke et al., 2013). Since the seminal work of the Danish psychologist Olweus (1978), the conceptualisation of bullying has continued to evolve. Initially, the construct primarily referred to physical harassment and the harsh treatment that stronger pupils might inflict on weaker peers. However, it is now understood to encompass a broader spectrum of behaviours, including more subtle forms of aggression and intimidation. Bullying is typically distinguished from other forms of violent or aggressive behaviour according to several defining criteria. Specifically, it must be intentional (i.e., aimed at causing harm), repetitive (i.e., occurring repeatedly over time and directed at the same victim), and characterised by an imbalance of power between the perpetrator and the victim (e.g., Olweus, 1993; Menesini & Salmivalli, 2017).

Current research identifies four main types of bullying. Physical bullying involves direct aggression, such as hitting or pushing, while verbal bullying includes insults, name-calling, and threats. Psychological (or emotional) bullying encompasses behaviours such as social exclusion, rumour-spreading, and manipulation of friendships. Although less visible than physical bullying, it can have serious long-term consequences, including anxiety, depression, and low self-esteem (Olweus, 1993). Cyberbullying occurs through digital platforms, including social media, messaging applications, and online games, and may involve harassment, exclusion, impersonation, rumour-spreading, or threatening messages (Wolke & Lereya, 2015; Menesini & Salmivalli, 2017). Growing evidence suggests that cyberbullying can be as harmful as, or even more harmful than, traditional forms of bullying because of its wide reach and constant accessibility (Kowalski et al., 2014).

The present study examines risk and protective factors associated with bullying victimisation among Algerian children aged 10 and 12 years. Adopting a comprehensive approach, it investigates victimisation across home, school, and online contexts. Specifically, the study considers physical and verbal sibling victimisation, physical, verbal, and relational peer victimisation at school, and multiple forms of cyberbullying, including online ridicule, exclusion, rumour-spreading, and the sharing of hurtful comments, images, or videos.

In this paper, these issues are discussed within a relatively underexplored social context, Algeria, a mostly Arab, Muslim, and a North African country. The study also employs international survey instruments that have, since 2011, undergone extensive testing and repeated use in studies worldwide, within the Children's Worlds International Survey of Child Well-Being (www.isciweb.org).

Theoretical Framework

Addressing bullying victimisation requires a theoretically grounded and contextually sensitive framework. The present research draws primarily on ecological systems theory and cross-cultural perspectives on individualism–collectivism to identify multilevel predictors of victimisation and inform evidence-based intervention.

Ecological systems theory, developed by Bronfenbrenner (1979), conceptualises child development as embedded within nested and interacting systems: The microsystem (family, peers, school), mesosystem (interrelations among microsystems), exosystem (indirect environmental influences), macrosystem (cultural values, norms, and laws), and chronosystem (changes over time).

According to the ecological framework, bullying arises from interactions between individual, relational, institutional, and societal factors (Lee, 2011). At the microsystem level, characteristics such as social competence, self-perception, family relationships, attachment quality, and exposure to conflict may influence vulnerability to victimisation. At the school level, peer norms, teacher responsiveness, and school climate can either reinforce or reduce bullying behaviours (Lee, 2011; Borualogo et al., 2024). At the macrosystem level, cultural norms regarding authority, gender roles, conformity, and aggression shape how bullying is expressed, tolerated, or sanctioned. The chronosystem further suggests that, without early and targeted intervention, victimisation may persist over time. This perspective highlights the importance of identifying both risk and protective factors across interconnected contexts.

Complementing this framework, Triandis's cross-cultural theory (Triandis, 2001) emphasises the role of cultural orientations in shaping social behaviour. Collectivistic societies, such as Algeria, place greater value on group harmony and conformity, which may increase vulnerability to exclusion and discourage the reporting of bullying because of concerns about family reputation and social stigma (Cheng et al., 2011). Research suggests that relational victimisation is more common in individualistic societies, whereas collectivistic societies tend to exhibit higher bully-to-victim ratios (Smith et al., 2019). Furthermore, individualism has been positively associated with both traditional and cyberbullying perpetration, while collectivism is negatively associated with these forms of bullying (Görzig et al., 2021). Nevertheless, bullying prevalence and reporting are strongly influenced by socio-cultural norms, and trends have varied over time, partly due to anti-bullying initiatives and the impact of the COVID-19 pandemic (Görzig, 2021; OECD, 2026). Integrating ecological and cultural perspectives therefore provides a comprehensive framework for identifying risk and protective factors and informing culturally relevant bullying prevention strategies.

Consequences of bullying victimisation on children

International research enumerated many destructive consequences of bullying prevalence in families, schools, cyber spaces and the larger community environments. For instance, an association between bullying victimisation and mental health

problems has been documented (Wolke et al., 2013; Le et al., 2019). Georgiou (2008) suggested that male gender and depressive symptoms are linked with all types of bullying behaviour and experience. The school life of bullying victims also suffers greatly, with changes in students' sense of school belonging and perceptions of their classroom climate (Pryce & Frederickson, 2013), frequent absenteeism and lower subjective well-being (Tiliouine, 2015), and with falling achievement for all racial/ethnic groups (Williams & Peguero, 2013). Though, a number of factors may mediate these relationships, such as living with a single parent, parental style, mainly maternal responsiveness and over-protection of the child (Georgiou, 2008).

For Fabris et al. (2021) victimisation through bullying worsens the victim's negative self-perception and exacerbates his feelings of unsafety. It has, therefore, been concluded that that school bullying is a complex phenomenon deserving the attention of researchers and policy makers at all levels. And, thus, its prevention should be recognised as a priority in all societies. At least, decision makers should know that from a cost-benefit point of view, victims of bullying are "overconsumers" of society's health and social support systems. According to Olweus and Breivik (2014) society can spare as much as two million dollars by preventing the life-course development of just one single marginalised/victimised case. Undoubtedly, societies with underperforming health systems will suffer greater pressures as a consequence of high prevalence of bullying.

Moreover, sibling bullying represents a serious and widespread problem, as Wolke and Skew (2012) point out. The frequency of sibling bullying reaches 50% every month, and between 16% and 20% of victims are involved in bullying several times a week. Wolke and Skew (2012) estimates that up to 40% of siblings experience brotherly bullying every week. Sibling bullying refers to any physical or verbal aggressive behavior involving one or both siblings. Some research indicates that sibling and peer victimisation can be linked. For instance, in the study of Peng et al. (2022), 12.5% of the participants had experienced bullying from their siblings, and 10.1% of them had experienced peer victimisation, while 4.7% of them had experienced both sibling and peer victimisation. Wolke and Skew (2012) indicates that the experience of sibling bullying increases the risk of engaging in school bullying, and this prioritises the study of the relationship between sibling bullying and school peer bullying. It was equally suggested that exposure to sibling bullying in early childhood may lead to depression and self-harm problems and poor mental health, especially in early adulthood (e.g., Bowes et al., 2014).

With the expansion of the use of the Internet and social media and wide accessibility of online communication, cyberbullying seems expanding. Cyberbullying shares key characteristics with traditional forms of bullying, particularly intentionality and the repetition of harm. However, it differs in that the harm, such as insults, threats, spreading rumours, sharing humiliating images, or impersonation, is inflicted through digital technologies, including social media posts, messaging applications, emails, and other online platforms (Kowalski et al., 2014). Although bullying and cyberbullying are distinct phenomena, they have been found to be highly correlated (Baldry et al., 2017; Modecki et al., 2014; Waasdorp & Bradshaw, 2015). OECD (2026) concluded that meta-analyses indicate that cyberbullying remains less common than in-person bullying, with prevalence estimates that are roughly half as high. Cyberbullying

victimisation was reported at 2.1% among Norwegian adolescents aged 13 to 15 years, compared with 3.9% for traditional bullying victimisation (Arnarsson et al., 2020). Moreover, a significant overlap is documented between these two forms of bullying, with, for instance, ‘about two thirds of students who experienced cyberbullying are also targets of traditional bullying’ (OECD, 2026: 17). In person bullying was reported as a strong predictor of cyberbullying and researchers recommend considering the two types together.

However, this does not mean that in terms of harm, cyberbullying is less harmful. On the contrary, victimisation, whether traditional or online, puts children and adolescents at multiple risks. The findings of Moore et al. (2017) suggest a causal relationship between exposure to bullying and poor mental health outcomes, as well as substance use. Their results also indicate that alcohol use among adolescents is associated with bullying victimisation. Kyrrestad et al. (2025) further confirmed that alcohol consumption in a Norwegian sample was significantly associated with being cyberbullied, but not with being traditionally bullied.

The Algerian context and bullying

In Algeria, bullying is generally addressed under the broader category of school violence, making it difficult to obtain precise data on its prevalence and harm. However, a Ministry of National Education survey conducted during the 2015–2016 academic year reported that 80% of violent incidents occurred between students, suggesting that peer aggression, including bullying, constitutes a significant proportion of school violence. Middle school students (aged 11–14) were identified as the most vulnerable group, followed by secondary school students, with verbal and psychological violence being the most common forms (Benghafour, 2020: 188).

Further evidence comes from Rudatskira et al. (2014), who analysed data from 4,532 Algerian adolescents participating in the 2011 WHO School-Based Health Survey. They found that 51.1% of students reported experiencing bullying in the previous 30 days, although this figure may be inflated due to a broad definition of bullying that included single incidents. The study also revealed that 48% of students had been involved in a physical fight in the past year, with boys reporting significantly higher involvement than girls. Notably, students engaged in physical fighting were 67% more likely to report being bullied.

Data from four waves of the Children’s Worlds (ISCWeB) surveys conducted in Algeria since 2011 has provided important insights into children’s experiences of bullying. Using self-report questionnaires, children were asked about physical bullying (being hit), passive bullying (being left out), and verbal bullying (being called unkind names) during the previous month. Across these surveys, between 66% and 74.5% of children reported never experiencing physical bullying, while 6% to 7.5% reported repeated victimisation. Passive bullying was more common, affecting up to 44.5% of children during the COVID-19 period, with repetitive incidents increasing over time. Psychological bullying was also frequent, particularly during the COVID-19 period, when about half of the children reported being called unkind names, and around 14% experienced repeated incidents (Tiliouine, 2026).

Overall, despite minor sampling variations, the findings suggest that around age 11, approximately one-quarter to one-third of children experience physical bullying, while an even larger proportion report social exclusion or verbal victimisation at least once in the preceding month (Tiliouine, 2026).

The longitudinal study by Tiliouine et al. (2019), found that although students' satisfaction with school declined from age 12 to 14, the frequency of physical and social bullying remained stable across survey waves. This stability suggests that the same children may experience continued victimisation, highlighting the need for early and targeted intervention rather than assuming the problem will resolve with age.

Research on bullying in Algeria remains limited and is often framed within broader discussions of school violence, with insufficient attention to cultural context. Findings on gender differences are mixed. Some studies report that girls are more likely to be bullied, while others show that boys are more exposed to direct forms such as physical bullying. Indirect bullying (e.g., exclusion) tends to affect both genders similarly. Age patterns also vary, though some evidence suggests that bullying decreases slightly with age, while verbal victimisation may peak in early adolescence (Tiliouine, 2026).

Geographical and socio-economic factors also play a role. Children from poorer households and those who frequently change residence are more likely to be bullied. Regional differences were observed in some survey waves, with lower rates in rural areas, though these differences were not consistent over time. Bullying is negatively associated with well-being, life satisfaction, and academic engagement, and is linked to higher absenteeism and sedentary lifestyles (Tiliouine, 2015, 2026).

The broader socio-cultural context in Algeria which is characterised by academic pressure, systemic educational challenges, traditional norms discouraging disclosure, and slow pedagogical reform, contributes to an environment where bullying can persist. Students perceived as "different" are particularly vulnerable (Tiliouine, 2015).

On the other hand, although the family institution in Algeria remains largely traditional in its structure and role distribution and is characterised by relatively large household sizes within a predominantly conservative culture (Tiliouine & Achoui, 2018), research on sibling bullying remains limited. Existing studies are often conducted within the framework of students' academic projects and typically rely on small samples and limited methodological approaches.

The findings of Sabah et al. (2022) indicate that sibling physical and verbal victimisation have statistically significant effects on school victimisation. Similarly, sibling physical and verbal bullying significantly predict school bullying. Moreover, parental involvement plays a noticeable mediating role in both the occurrence and the consequences of these behaviors.

Bouamoucha (2025) explored cyberbullying with 92 young users of the Internet. He reported that the most common forms of cyberbullying included: Hacking users' accounts or creating fake accounts in their name, spreading false rumours, photos, and videos with the aim of distorting or harassing others, in addition to receiving offensive, threatening, and intimidating messages via social media. For him, what motives these behaviours is often the bully's desire to control or take revenge on others, as well as the desire to ridicule and belittle others.

Legally, Algeria has established a substantial framework to combat violence and protect children's rights, including constitutional commitments, education laws prohibiting corporal punishment and moral abuse, child protection legislation, and laws criminalising discrimination and hate speech. This includes laws to combat cyber-crime, including Law 09–04 (2009) on ICT crimes, 2014 amendments to the Penal Code, and Law 20-5-2020 aimed at preventing hate speech and segregation. Despite this, the notion of bullying has been avoided by the legislator, as has been the case in the latter law (Tiliouine, 2026). Important challenges lie in the lack of an effective implementation, monitoring, and coordination across institutions. This could also be explained by the lack of solid research institutions and the poor funding of scientific research in general.

Research Questions

The present study seeks to examine the prevalence and predictors of bullying victimisation within the Algerian socio-cultural context, framed within the ecological systems theory and cross-cultural perspectives.

Specifically, the study addresses the following research questions:

1- What is the prevalence of different forms of bullying victimisation, namely home bullying (physical and verbal), school bullying (physical, verbal, and passive), and cyberbullying, during the past month? How do these prevalence rates vary according to gender and age group? This question aims to establish the frequency and distribution of bullying experiences across demographic categories, allowing for comparison between direct and indirect forms of victimisation and across age.

2- To what extent are the selected indicators of bullying victimisation on the one hand associated with key demographic variables; and on the other to what extent these indicators are associated? This question examines whether structural and background characteristics are consistent with ecological models that situate bullying within broader contextual influences.

3- What are the most significant predictors of bullying victimisation across the nine measured indicators of bullying? This question seeks to identify the strongest explanatory variables across different forms of victimisation. By examining predictors simultaneously, the study aims to determine whether certain factors consistently predict victimisation across contexts (home, school, and online), or whether distinct forms of bullying are associated with different risk profiles.

Method

Sample

A total of 1,841 participants (53.3% girls) were recruited. Of these, 918 children belonged to 16 primary schools (5th year) and were identified as the 10-year-old group (mean age = 10.35, SD = 0.73). Meanwhile, 923 students belonged to 16 mid-

dle schools (1st and 2nd year) and were identified as the 12-year-old group (mean age = 12.24, SD = 0.93).

Overall, 4.2% of the sample reported having a disability. In addition, 92.9% reported having siblings living with them, 8.2% reported having other children, living with them, and 11.2% indicated that their father did not live with them at home. Single parent families are less common in this context.

Variables and Measurement

Dependent variables

In this study, bullying victimisation indicators at home, at school and cyber bullying have been explored. The victimisation indicators which were used as dependent variables include:

- The frequency of physical bullying experiences (“How often in the last month have you been hit by your siblings?”).
- The frequency of verbal bullying experiences (“How often in the last month have you been called unkind names by your siblings?”).
- The frequency of physical bullying experiences (“How often in the last month have you been hit by other children at school?”).
- Verbal bullying experiences (“How often in the last month have you been called unkind names by other children in school?”).
- Psychological bullying experiences (“How often in the last month have you been left out by other children in your class?”).
- How often: Made fun of on social media (WhatsApp, Telegram, Instagram, TikTok).
- How often: Excluded or ignored on social media (WhatsApp, Telegram, Instagram, TikTok) or in a chat.
- How often: Someone has spreaded rumours about me on the internet or on social media (WhatsApp, Telegram, Instagram, TikTok)?
- How often: Someone has posted hurtful comments/images/videos of me on social media (WhatsApp, Telegram, Instagram, TikTok)?

Four response options were proposed for each item: 0 = never; 1 = once; 2 = 2 or 3 times; and 3 = more than 3 times. Each bullying indicator (dependent variable) was subsequently dichotomised into 0 = not bullied during the last month (never or once) and 1 = bullied during the last month (two or more times). This cut-off was selected because repetition is a defining characteristic of bullying, distinguishing it from isolated aggressive incidents (Olweus, 1993; Menesini & Salmivalli, 2010). A frequency of at least two occurrences within the reference period has been widely used in bullying research to operationalise repeated victimisation and to identify individuals exposed to ongoing bullying rather than one-time events (Borualogo et al., 2024). The dichotomisation therefore aligns the measurement of bullying with its theoretical definition and facilitates comparability with previous studies using the same criterion.

Independent variables

Five set of independent variables were also used:

-Demographic variables: gender, age group, disability status, living with siblings, living with other children at home, and living with father.

Family-related variables:

- There are people in my family who care about me,
- If I have a problem, people in my family will help me,
- We have a good time together in my family,
- I feel safe at home,
- My parents listen to me and take what I say into account.
- My parents and I decide together.

Peer- related variables:

- I have enough friends,
- My friends are usually nice to me,
- My friends and I get along well together,
- If I have a problem, I have a friend who will support me.
- How often do you feel alone?

School-related variables:

- My teachers care about me,
- If I have a problem at school, my teachers will help me,
- If I have a problem at school, other children will help me,
- There are a lot of arguments between children in my school,
- My teachers listen to me and take what I say into account,
- I feel safe at school.

Local community-related variables;

- I feel safe when I walk in the area I live in.
- In my area there are enough places to play or to have a good time.
- If I have a problem there are people in my local area who will help me.
- Adults in my local area are kind to children.
- In my local area, I have opportunities to participate in decisions about things that are important to me.
- Adults in my area listen to children and take them seriously.

In all items, except in demographic variables, agreement scales which included five response options: 1=I do not agree; 2=I agree a little; 3=I agree somewhat; 4=I agree a lot; and 5=I totally agree, were used. School-related variables are also measured using frequency of fights between children at school which included five response options: 1=Never; 2=Sometimes; 3=At least once a week; 4=Most days;

5=Every day (Rees et al., 2020; Brogluo et al., 2024). The peer-related question on social exclusion (How often do you feel alone?) was scored: 1=Never; 2=Sometimes; 3=At least once a week; 4=Most days; 5=Every day.

Procedure

Official authorisation was obtained from the Directorate of Education of the Province (*Wilaya*) of Oran. Schools were randomly selected from the official list of public schools provided in the Directorate to ensure representation of the entire Province, including the main city and surrounding districts. Permission was subsequently sought from the head teachers of the selected schools, and arrangements were made regarding the timing of data collection. These arrangements were also discussed with classroom teachers. In addition, informed consent was obtained from the participating children.

Paper-based questionnaires were distributed, completed, and collected during regular teaching sessions in the presence of members of the research team.

Statistical Analyses

The statistical analyses were conducted in three stages, corresponding to the study's research questions.

First, descriptive statistics were used to address Research Question 1, which examined the prevalence of different forms of bullying victimisation during the past month and their variation according to gender and age group. Prevalence rates were calculated for the nine bullying victimisation indicators (hit by siblings, called unkind names by siblings, hit by peers, called unkind names by peers, excluded by peers, made fun of by peers, cyber exclusion, cyber rumours, and cyber harmful posts). Pearson's chi-square tests were used to assess whether victimisation rates differed significantly across gender and age groups, and Cramer's V was calculated to estimate the strength of these associations.

Second, to address Research Question 2, bivariate analyses were conducted to examine associations between the nine bullying victimisation indicators and a range of demographic, family, peer, school, and local environment variables. Pearson's chi-square tests were used to identify significant relationships between victimisation experiences and these contextual factors, while Cramer's V was used to assess the magnitude of the associations. This stage provided an initial assessment of whether bullying victimisation was related to demographic and ecological characteristics consistent with the study's conceptual framework.

Finally, Research Question 3 was addressed using binary logistic regression analyses. Separate logistic regression models were estimated for each bullying victimisation indicator to determine which demographic, family-, school-, peer-, and local environment-related variables independently predicted the likelihood of victimisation. Logistic regression was selected because the dependent variables were dichotomous (victimised vs. not victimised). This approach enabled the estimation of adjusted odds ratios and the identification of the most significant predictors of each form of bullying victimisation while controlling for other variables included in the models (e.g., Borualogo et al., 2024). Statistical significance was evaluated at the $p < .05$ level. All analyses were conducted using SPSS version 25.

Results

1- The prevalence of repeated bullying victimisation (defined as occurring two or more times) across home, school, and online contexts, stratified by gender and age group (10 and 12 years) is displayed in Table 1.

For physical sibling aggression, 37% of participants reported being hit by a sibling two or more times ($n=563$, $N=1,521$). Girls reported slightly higher rates (38.2%) than boys (35.7%). Age differences were evident, with 10-year-olds reporting higher levels (41.1%) than 12-year-olds (33.1%).

- Similarly, 34.2% of participants ($n=525$, $N=1,537$) reported being called unkind names by siblings two or more times. Girls again reported somewhat higher rates (36.8%) compared to boys (31.2%). In contrast to physical aggression, verbal sibling victimisation showed minimal age differences (34.7% at age 10 vs. 33.6% at age 12). Overall, sibling victimisation was common, affecting approximately one third of the sample.
- Physical victimisation by peers at school was reported by 17.9% of participants ($n=266$, $N=1,490$). Boys reported substantially higher rates (24.5%) than girls (12.0%). Physical peer victimisation was more common among 10-year-olds (19.7%) than 12-year-olds (16%).

Verbal peer victimisation (being called unkind names) was among the most prevalent forms of bullying, reported by 33.9% of participants ($n=482$, $N=1,420$). Boys reported markedly higher levels (39.5%) than girls (21.9%). A slight age increase was observed (31.6% at age 10 vs. 36.4% at age 12).

Social exclusion at school (being left out) was reported by 30.3% of participants ($n=432$, $N=1,424$). Boys reported somewhat higher levels (32.4%) than girls (28.4%). A notable age difference emerged, with higher prevalence among 10-year-olds (36.1%) compared to 12-year-olds (24.7%). Taken together, verbal and relational forms of peer victimisation were more common than physical forms.

-Repeated cyber-victimisation was less prevalent than face-to-face bullying but remained notable. Being made fun of on social media was reported by 9.8% of participants ($n=160$, $N=1,633$), with higher rates among boys (13.1%) than girls (6.8%). Age differences were small (10.5% at age 10 vs. 9.1% at age 12).

Being excluded or ignored online was reported by 10.4% of participants ($n=171$, $N=1,642$). Boys again reported higher rates (14.1%) compared to girls (7.1%). Rates were slightly higher among 10-year-olds (11.1%) than 12-year-olds (9.7%).

Having rumours spread online was reported by 10.3% of participants ($n=171$, $N=1,656$). Boys reported more than twice the prevalence (14.8%) compared to girls (6.4%). A modest decline was observed with age (12.2% at age 10 vs. 8.4% at age 12).

Finally, 8.1% of participants ($n=137$, $N=1,684$) reported that someone had posted hurtful comments, images, or videos about them online two or more times. Boys reported substantially higher rates (12.5%) than girls (4.2%). Prevalence was higher at age 10 (10.1%) than at age 12 (6.2%) (Table 1).

2- Chi-square analyses revealed that gender was not significantly associated with sibling physical victimisation or peer exclusion. Effect sizes (Cramer's V) were gen-

Table 1 Prevalence of the nine bullying victimisation indicators by Gender and Age Group

		Girls	Boys	Total	10 yo	12 yo	Total
Hit by siblings	Never	487	471	958	435	523	958
	%	61.8	64.3	62.99	50.86	66.9	62.98
	2 or more times	301	262	563	304	259	563
	%	38.2	35.7	37.1	41.14	33.1	37.02
	Total	788	733	1521	739	782	1521
Called unkind names by siblings	Never	508	504	1012	493	519	1012
	%	63.2	68.8	65.84	65.3	66.4	65.84
	2 or more times	296	229	525	262	263	525
	%	36.8	31.2	34.16	34.7	33.6	34.16
	Total	804	733	1537	755	782	1537
Hit by other children at school	Never	698	526	1224	613	611	1224
	%	88	75.5	82.15	80.3	84	82.15
	2 or more times	95	171	266	150	116	266
	%	12	24.5	17.85	19.7	16	17.85
	Total	793	697	1490	763	727	1490
Called unkind names by other children	Never	518	420	938	492	446	938
	%	71.3	60.5	66.01	68.4	63.6	66.06
	2 or more times	208	274	482	227	255	482
	%	21.9	39.5	33.94	31.6	36.4	33.94
	Total	726	694	1420	719	701	1420
Left out by other children at school	Never	520	472	992	450	542	992
	%	71.6	67.6	69.66	63.9	75.3	69.66
	2 or more times	206	226	432	254	178	432
	%	28.4	32.4	30.34	36.1	24.7	30.34
	Total	726	698	1424	704	720	1424
Made fun of on social media	Never	799	674	1473	724	749	1473
	%	93.2	86.9	90.20	89.5	90.9	90.20
	2 or more times	58	102	160	85	75	160
	%	6.8	13.1	9.80	10.51	9.1	9.80
	Total	857	776	1633	809	824	1633
Excluded or ignored on social media	Never	802	669	1471	734	737	1471
	%	92.9	85.9	89.59	88.86	90.3	89.59
	2 or more times	61	110	171	92	79	171
	%	7.1	14.1	10.41	11.14	9.7	10.41
	Total	863	779	1642	826	816	1642
Someone has spread rumours about me on the internet or on social media	Never	825	660	1485	726	759	1485
	%	93.6	85.2	89.67	87.79	91.6	89.67
	2 or more times	56	115	171	101	70	171
	%	6.4	14.8	10.33	12.21	8.4	10.33
	Total	881	775	1656	827	829	1656
Someone has posted hurtful comments/ images/videos of me on social media	Never	844	703	1547	749	798	1547
	%	95.8	87.5	91.86	89.91	93.8	91.86
	2 or more times	37	100	137	84	53	137
	%	4.2	12.5	8.14	10.08	6.2	8.14
	Total	881	803	1684	833	851	1684

erally small to moderate, indicating modest practical significance. However, disability status was significantly associated with all nine bullying victimisation indicators (all $p \leq .034$), with small to approaching moderate effect sizes (Cramer's $V = 0.075 - 0.170$). The strongest associations were observed for cyberbullying and peer exclusion. Gender was significantly associated with most peer and cyber victimisation outcomes ($p < .05$), although effect sizes were small. Age demonstrated selective associations, particularly with peer verbal victimisation and cyber behaviours. Living with siblings was primarily related to sibling victimisation, whereas living with other children and living with father showed minimal associations. Overall, although statistically significant associations were observed, effect sizes were small, indicating modest practical significance (Table 2).

Furthermore, statistically significant associations were found between different forms of bullying victimisation across contexts. For example:

- Physical and verbal sibling victimisation were significantly associated ($\chi^2 = 418.691$, Cramer's $V = 0.569$, $p < .001$).
- A significant association was observed between indicators of peer victimisation, such as: unkind names by peers and peer exclusion ($\chi^2 = 280.029$, Cramer's $V = 0.497$, $p < .001$).
- Strong relationships also emerged among cyberbullying indicators (e.g., cyber exclusion and cyber rumours: $\chi^2 = 573.697$, Cramer's $V = 0.612$, $p < .001$; cyber exclusion and fun-related peer bullying: $\chi^2 = 614.622$, Cramer's $V = 0.636$, $p < .001$) (Table 2).

These findings indicate that different forms and contexts of victimisation frequently overlap.

3- The associations between demographic characteristics and family-, peer-, school-, and community- related factors with multiple bullying indicators, including sibling victimisation, peer victimisation, and cyber victimisation were examined through binary logistic regression analyses. Odds ratios (OR) with 95% confidence intervals (CI) are reported. Only statistically significant predictors ($p < .05$) are described (Table 3).

Hit by Siblings Several demographic, family, peer, school, community variables were significantly associated with being hit by siblings.

Demographic Variables Girls had significantly higher odds of reporting being hit by siblings compared to boys (OR = 1.353, 95% CI [1.021, 1.793], $p = .035$), indicating a 35% increase in likelihood. Living with father was associated with significantly higher odds of sibling victimisation (OR = 1.803, 95% CI [1.162, 2.797], $p = .009$), corresponding to an 80% increase in odds (Table 3).

Family related factors Joint decision-making with parents was associated with reduced odds of being hit by siblings (OR = 0.870, 95% CI [0.764, 0.990], $p = .035$). Each unit increase in perceived shared decision-making reduced the likelihood of sibling victimisation by approximately 13%.

Table 2 Associations between demographic variables and bullying victimisation indicators (Chi-Square, X^2 , tests)

Gender		Hit by siblings	Unkind names by siblings	Hit by peers	Unkind names by peers	Ex- cluded by peers	Fun peers	Cyber ex- cluded	Cyber rumours	Un- kind cyber posts
	X^2	0.981	5.298	39.864	18.564	2.699	18.736	21.826	32.036	38.291
Age	Cra- mer's V	0.25	0.059	0.164	0.114	0.044	0.107	0.115	0.139	0.151
	Sig	0.32	0.021	0.000	0.000	0.100	0.000	0.000	0.000	0.000
	X^2	10.473	0.196	3.655	21.726	21.726	0.912	0.934	6.351	8.375
	Cra- mer's V	0.083	0.011	0.051	0.124	0.124	0.024	0.024	0.062	0.071
Handi- cap	Sig	0.001	0.062	0.56	0.000	0.000	0.34	0.334	0.012	0.004
	X^2	1.514	4.552	10.232	8.450	3.208	8.254	17.399	23.518	5.922
	Cra- mer's V	-0.033	-0.057	-0.086	-0.080	-0.049	-0.074	-0.107	-0.123	-0.061
	Sig	-0.219	0.033	0.001	0.004	0.073	0.004	0.000	0.000	0.015
Siblings	X^2	18.961	21.139	6.859	3.819	2.740	0.525	3.956	1.519	4.515
	Cra- mer's V	0.112	0.117	0.068	0.052	0.044	0.18	0.049	0.030	0.052
	Sig	0.000	0.000	0.009	0.051	0.098	0.468	0.047	0.218	0.034
	X^2	1.491	0.726	0.359	0.190	1.128	0.462	4.019	0.328	0.366
Other Child- ren	Cra- mer's V	0.031	0.022	0.016	0.012	0.028	0.017	0.049	0.014	0.015
	Sig	0.222	0.394	0.549	0.663	0.288	0.497	0.045	0.567	0.545
	X^2	1.491	0.726	0.359	0.190	1.128	5.570	3.770	5.026	0.475
	Cra- mer's V	0.031	0.022	0.016	0.012	0.028	0.058	0.048	0.055	0.017
Father	Sig	0.222	0.394	0.549	0.663	0.288	0.018	0.052	0.025	0.491
	X^2		418.691	23.979	56.786	74.466	29.002	32.589	29.275	14.721
	Cra- mer's V		0.569	0.139	0.218	0.251	0.146	0.154	0.146	0.103
	Sig		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hit by Siblings	X^2	418.691								
	Cra- mer's V	0.569								
	Sig	0.000								
	X^2									
Unkind names by Siblings	Cra- mer's V	0.569								
	Sig	0.000								
	X^2									
	Cra- mer's V									
	Sig									

Table 2 (continued)

Gender		Hit by siblings	Unkind names by siblings	Hit by peers	Unkind names by peers	Ex- cluded by peers	Fun peers	Cyber ex- cluded	Cyber rumours	Un- kind cyber posts
	X ²	0.981	5.298	39.864	18.564	2.699	18.736	21.826	32.036	38.291
Hit by Peers	X ²	23.979	25.039							
	Cra- mer's V	0.139	0.141							
	Sig	0.000	0.000							
Unkind names by Peers	X ²	56.786	85.374	307.217						
	Cra- mer's V	0.218	0.266	0.509						
	Sig	0.000	0.000	0.000						
Exclud- ed by Peers	X ²	74.466	77.639	157.195	280.029					
	Cra- mer's V	0.251	0.254	0.363	0.497					
	Sig	0.000	0.000	0.000	0.000					
Fun Peers	X ²	29.002	24.412	103.166	77.692	118.998				
	Cra- mer's V	0.146	0.133	0.275	0.244	0.302				
	Sig	0.000	0.000	0.000	0.000	0.000				
Cyber Exclude	X ²	32.589	26.704	97.613	97.935	127.745	614.622			
	Cra- mer's V	0.154	0.139	0.267	0.274	0.312	0.636			
	Sig	0.000	0.000	0.000	0.000	0.000	0.000			
Cyber Ru- mours	X ²	29.275	30.095	94.440	69.958	68.491	477.998	573.697		
	Cra- mer's V	0.146	0.147	0.262	0.231	0.228	0.559	0.612		
	Sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Unkind Cyber Posts	X ²	14.421	16.875	106.383	90.367	84.038	404.524	544.029	590.314	
	Cra- mer's V	0.103	0.109	0.276	0.259	0.250	0.511	0.590	0.612	
	Sig	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Table 3 Logistic Regression analysis of predictors of bullying across nine bullying indicators (significant results only)

Bullying indicators		Predictors	Regression coefficient (B)	Wald statistic	<i>p</i> -value	O.R. (Exp B)	C.I.
Hit by Siblings	Demographic variables	Gender (girls)	0.302	4.422	0.035	1.353	1.021–1.793
		Live with father	0.589	6.915	0.009	1.803	1.162–2.797
	Family factors	My parents and I decide together	−0.139	4.446	0.035	0.870	0.764–0.990
	Peer factors	How often do you feel alone?	0.283	20.815	0.000	1.327	1.175–1.498
	School factors	There are a lot of arguments between children in my school,	0.143	9.980	0.002	1.154	1.056–1.262
	Local area factors	In my area there are enough places to play or to have a good time	0.127	4.731	0.030	1.135	1.013–1.272
Unkind Names by Siblings	Demographic variables	Gender (girls)	0.400	7.370	0.007	1.492	1.118–1.992
		Live with father	0.498	4.919	0.027	1.646	1.060–2.557
	Family factors	We have a good time together in my family,	−0.219	5.874	0.015	0.803	0.672–0.959
		My parents listen to me and take what I say into account	−0.216	7.842	0.005	0.805	0.629–0.937
	Peer factors	How often do you feel alone?	0.198	9.948	0.002	1.218	1.078–1.378
		There are a lot of arguments between children in my school,	0.187	16.073	0.000	1.205	1.100–1.321

Table 3 (continued)

Bullying indicators		Predictors	Regression coefficient (B)	Wald statistic	<i>p</i> -value	O.R. (Exp B)	C.I.
Hit by Peers	School factors	If I have a problem at school, other children will help me,	-0.112	3.887	0.049	0.894	0.800-0.999
	Demographic variables	Gender (girls)	-0.635	12.486	0.000	0.530	0.373-0.754
		Live with siblings (no)	-0.607	3.839	0.050	0.545	0.297-1.000
	Peer factors	My friends are usually nice to me,	-0.251	7.304	0.007	0.778	0.648-0.933
		How often do you feel alone?	0.321	22.691	0.000	1.379	1.208-1.574
	School factors	There are a lot of arguments between children in my school,	0.280	22.762	0.000	1.323	1.179-1.484
	Local area factors	If I have a problem there are people in my local area who will help me	0.174	4.540	0.033	1.190	1.014-1.398
Unkind Names by Siblings	Demographic variables	Gender (girls)	-0.404	7.182	0.007	0.668	0.497-0.897
	Peer factors	My friends are usually nice to me,	-0.255	10.242	0.001	0.775	0.663-0.906
		30. How often do you feel alone?	0.267	17.185	0.000	1.306	1.151-1.482
	School factors	If I have a problem at school, my teachers will help me,	-0.2159	0.601	0.002	0.807	0.704-0.924
		There are a lot of arguments between children in my school,	0.176	12.960	0.000	1.193	1.084-1.313

Table 3 (continued)

Bullying indicators		Predictors	Regression coefficient (B)	Wald statistic	<i>p</i> -value	O.R. (Exp B)	C.I.
Excluded by Peers	Local area factors	Adults in my local area are kind to children	-0.150	5.129	0.024	0.861	0.756-0.980
	Peer factors	My friends are usually nice to me,	-0.194	5.625	0.018	0.824	0.701-0.967
		How often do you feel alone?	0.307	23.021	0.000	1.359	1.199-1.541
	School factors	There are a lot of arguments between children in my school,	0.248	23.730	0.000	1.281	1.160-1.415
	Local area factors	20.3. If I have a problem there are people in my local area who will help me	-0.143	4.120	0.042	0.867	0.756-0.995
	Family factors	I feel safe at home,	-0.335	8.372	0.004	0.715	0.570-0.898
	School factors	There are a lot of arguments between children in my school,	0.262	12.192	0.000	1.300	1.122-1.506
Excluded from cyberspace	Demographic variables	Gender (girls)	-0.569	6.368	0.012	0.566	0.364-0.881
	Peer factors	How often do you feel alone?	0.490	37.392	0.000	1.632	1.395-1.910
		Live with other children (no)	-1.315	6.498	0.011	0.268	0.098-0.739
	School factors	If I have a problem at school, other children will help me,	0.200	4.768	0.029	1.221	1.021-1.461
		There are a lot of arguments between children in my school,	0.300	15.487	0.000	1.350	1.163-1.568

Table 3 (continued)

Bullying indicators		Predictors	Regression coefficient (B)	Wald statistic	p-value	O.R. (Exp B)	C.I.
Rumours through Cyberspace	Demographic variables	I feel safe at school.	−0.291	10.048	0.002	0.748	0.625–0.895
		Gender (girls)	−0.684	9.160	0.002	0.505	0.324–0.786
	Family factors	There are people in my family who care about me,	−0.210	5.701	0.017	0.811	0.682–0.963
	Peer factors	I feel safe at home,	−0.342	8.659	0.003	0.710	0.566–0.892
		My friends are usually nice to me,	−0.214	3.965	0.055	0.807	0.649–1.004
		How often do you feel alone?	0.399	25.494	0.000	1.490	1.276–1.739
	School factors	My teachers care about me,	−0.205	3.935	0.047	0.815	0.665–0.998
		There are a lot of arguments between children in my school,	0.236	10.413	0.001	1.266	1.097–1.461
	Local area factors	I feel safe when I walk in the area I live in	0.206	4.160	0.041	1.228	1.008–1.497
		Adults in my local area are kind to children	−0.236	5.857	0.016	0.790	0.653–0.956
		Adults in my area listen to children and take them seriously	0.327	12.329	0.000	1.387	1.156–1.666
Unfriendly Cyber Posts	Demographic variables	Gender (girls)	-1.080	16.913	0.000	0.340	0.203–0.568
	Family factors	I feel safe at home,	−0.392	10.553	0.001	0.676	0.534–0.856
	Peer factors	30. How often do you feel alone?	0.418	23.477	0.000	1.519	1.283–1.799

Table 3 (continued)

Bullying indicators	Predictors	Regression coefficient (B)	Wald statistic	p-value	O.R. (Exp B)	C.I.
School factors	There are a lot of arguments between children in my school,	0.821	14.691	0.000	1.379	1.170–1.625
	I feel safe at school.	−0.240	5.758	0.016	0.786	0.645–0.957
Local area factors	Adults in my area listen to children and take them seriously	0.423	16.137	0.000	1.526	1.242–1.876

Peer related factors ‘Feeling Alone’ emerged as a strong predictor. Each unit increase in feeling alone was associated with a 33% increase in the odds of sibling physical victimisation (OR = 1.327, 95% CI [1.175, 1.498], $p < .001$) (Table 3).

School related factors Perceiving that there are many arguments between children at school was positively associated with sibling victimisation (OR = 1.154, 95% CI [1.056, 1.262], $p = .002$), indicating a 15% increase in odds per unit increase.

Local Area related factors Reporting that there are enough places to play in the local area was associated with higher odds of being hit by siblings (OR = 1.135, 95% CI [1.013, 1.272], $p = .030$), representing a modest but significant increase (13%) (Table 3).

Unkind Names by Siblings: Demographic Variables: Girls were significantly more likely than boys to report being called unkind names by siblings (OR = 1.492, 95% CI [1.118, 1.992], $p = .007$), indicating approximately 49% higher odds (Table 3).

Living with father was also associated with increased odds of sibling name-calling (OR = 1.646, 95% CI [1.060, 2.557], $p = .027$), representing a 65% increase in likelihood.

Family related factors: Two family-related variables were protective: Having a good time together as a family reduced the likelihood of sibling name-calling (OR = 0.803, 95% CI [0.672, 0.959], $p = .015$). Perceiving that parents listen and take the child’s views into account was also protective (OR = 0.805, 95% CI [0.629, 0.937], $p = .005$) (Table 3). Both findings indicate approximately 20% lower odds per unit increase in positive family perception.

Perception of School Perceiving that other children at school would help in case of problems was associated with reduced odds of sibling name-calling (OR = 0.894, 95% CI [0.800, 0.999], $p = .049$), though the effect size was modest.

In contrast, perceiving frequent arguments among children at school significantly increased the likelihood of sibling name-calling (OR = 1.205, 95% CI [1.100, 1.321], $p < .001$), corresponding to a 21% increase in odds.

Feeling Alone Loneliness was again a significant predictor. Each unit increase in feeling alone increased the odds of sibling name-calling by 22% (OR = 1.218, 95% CI [1.078, 1.378], $p = .002$) (Table 3).

Discussion

This study addresses a significant gap in the literature by examining multiple forms of bullying: physical, verbal, and psychological, across: home, school, and online contexts during early adolescence in Algeria, a setting where large-scale research on these dynamics remains limited. The large sample and the balanced gender and age distribution (10- and 12-year-olds) strengthen the findings and allow meaningful comparisons.

A striking finding is the high prevalence of sibling physical aggression: 37% of participants reported being hit two or more times, indicating that more than one in three children experience repeated physical victimisation at home. This exceeds Wolke and Skew (2012) estimations that between 16% and 20% of victims are involved in this form of bullying several times a week. Girls reported slightly higher levels of victimization than boys, suggesting that sibling aggression is both common and potentially gendered. Beyond prevalence, the results clearly demonstrate that victimisation is multidimensional and interconnected rather than confined to a single context.

Gender differences were more pronounced in peer and cyber victimisation than within the family context, possibly reflecting gendered social dynamics in school and digital environments. Age-related differences further indicate developmental shifts, with older children showing patterns consistent with increased relational and cyber victimisation, likely due to expanding peer friendships and spending longer time online. These findings align with developmental research suggesting that bullying evolves in form as children grow older (Sabah et al., 2022; Tiliouine, 2026).

One of the most important findings concerns the heightened vulnerability of students with disabilities, particularly in peer and cyber settings. This supports vulnerability and social marginalisation frameworks, which posit that visible or perceived differences increase the risk of targeting. Given the scarcity of research on this issue in Algeria, this finding warrants urgent attention and targeted protective strategies.

Family structure and relational dynamics were associated with sibling victimisation. Living with the father and having siblings were linked to higher odds of sibling victimisation, suggesting that family composition may be related to patterns of sibling conflict. However, given the cross-sectional nature of the study, these associations should not be interpreted as causal.

Family processes appeared to play an important protective role, consistent with previous research (Sabah et al., 2022; Georgiou, 2008). Shared decision-making, positive family time, and parental responsiveness were all associated with lower levels of sibling victimisation. These findings underscore the potential importance of supportive and communicative parenting practices in fostering positive sibling relationships.

The association between living with the father and increased odds of physical victimisation warrants cautious interpretation. Although paternal presence is often assumed to support supervision and family functioning, the current findings do not provide information about the quality of paternal involvement or family interactions. The observed association may reflect unmeasured family characteristics or contextual factors rather than the direct influence of fathers themselves. Further longitudinal research is needed to better understand how paternal roles and broader family dynamics relate to sibling bullying and victimisation.

Loneliness stood out as a robust and consistent predictor across forms of sibling victimisation, underscoring the role of children's emotional well-being. School climate also played a significant role. Perceiving frequent peer conflict at school increased the likelihood of sibling victimisation, while perceiving peer support showed a modest protective effect. This was also found in an Indonesian sample (Borualogo et al., 2024). These patterns suggest a spillover mechanism, whereby exposure to conflictual peer environments may reinforce aggressive interaction patterns at home. The association between community play spaces and sibling physical victimisation, although modest, further suggests that children's experiences are shaped by broader environmental contexts.

Overall, the strong associations between different forms of victimisation confirm that bullying experiences rarely occur in isolation (Waasdorp & Bradshaw, 2015; Baldry et al., 2017; Kyrrestad et al., 2025; Sabah et al., 2022). Victimisation at home, at school, and online are interrelated, supporting an ecological perspective in which children's development is shaped by interconnected social systems. Bullying should therefore be understood as a cross-contextual phenomenon rather than as separate, independent experiences.

Recommendations and limitations

Several key recommendations emerge from this study:

- The need for longitudinal research to clarify causal pathways and better understand how victimisation in one context may predict or reinforce victimisation in others over time.
- Algeria is adopting an inclusive education model to facilitate the integration of children with disabilities in the school system. However, it is essential to identify specific risk mechanisms and design targeted protective interventions for vulnerable children.
- Family-based prevention programs should promote positive parenting practices, shared decision-making, and emotional communication to reduce sibling aggression.

- Integrated anti-bullying policies that address home, school, and online environments simultaneously are likely to be more effective than isolated interventions.
- Cyberbullying research and digital safety education should be expanded nationally, given developmental shifts toward online victimisation and the current lack of large-scale Algerian data.

By adopting an ecological and cross-contextual approach, prevention and intervention strategies can more effectively address the complexity of bullying experiences during early adolescence.

However, several limitations of these findings should be acknowledged. Most importantly, the cross-sectional design precludes causal inferences. For instance, the results indicate significant associations between sibling, peer, and cyber victimisation, but the study cannot determine the directionality of these relationships or how victimisation experiences across different contexts evolve over time. Longitudinal studies are therefore needed to replicate and extend these findings and to clarify potential developmental pathways.

In addition, the study relied exclusively on self-reported data. While self-reports are essential for capturing children's subjective experiences, they may be influenced by other factors, such as social desirability. Future research would benefit from incorporating multiple informants, including parents, teachers, and peers, as well as qualitative methods to provide deeper contextual understanding and to strengthen the validity of the findings.

The representativeness of the sample also should be considered. Ensuring that future samples reflect the broader schooled population across different geographic regions of Algeria would enhance the generalisability and reliability of the results. Furthermore, although children's perceptions are central to understanding well-being and victimisation, supplementing subjective measures with observational or contextual indicators would allow for a more comprehensive assessment.

Finally, the rapidly evolving nature of digital engagement means that patterns of cyber victimisation may change over time. Given the limited national data on cyberbullying in Algeria, continued monitoring and the development of updated measurement tools are essential.

Despite these limitations, the study provides important initial evidence of the interconnected nature of sibling, peer, and cyber-victimisation in early adolescence within an under-researched cultural context. It offers a valuable foundation for future longitudinal, multi-method, and intervention-focused research. Moreover, integrating ecological and cross-cultural perspectives provides both researchers and policymakers with a broader understanding of bullying victimisation among children. While the ecological framework explains how multiple social environments interact to shape children's experiences, as reflected in our findings, the cross-cultural perspective situates these interactions within specific family contexts and the broader cultural model. Effective prevention strategies, therefore, should take into account not only the multiple contexts in which children live but also the cultural meanings that shape social relationships within those contexts. Consequently, interventions addressing bullying in Algeria may benefit from culturally sensitive, multi-level approaches that in the mean time engage families, schools, and communities.

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Declarations

Competing interests The authors declare no competing interests.

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Authors and Affiliations

Habib Tiliouine¹

✉ Habib Tiliouine
htiliouine@yahoo.fr

¹ Faculty of Social Sciences, University of Oran2 Mohamed Ben Ahmed, Oran, Algeria