

# Traditional vs. cyber bullying structures in middle-schoolers

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**Abstract:** With the widespread use of the internet and electronic communication tools in daily life, a new form of bullying—cyberbullying—has emerged among adolescents. To understand the current situation of traditional and cyber bullying experienced and perpetrated by middle school students, and to help them cope with bullying issues, this study proposes a theoretical framework of traditional and cyber bullying among middle school students based on literature review, theoretical analysis, and semi-structured interviews. A structural questionnaire on both forms of bullying was developed. The findings indicate that the traditional bullying questionnaire includes three dimensions: (victimization of) physical, verbal, and relational bullying; while the cyber bullying questionnaire includes three dimensions: (victimization of) verbal, relational, and rights-based bullying. Regression analysis shows that traditional bullying victimization can predict cyber victimization, and traditional bullying perpetration can predict cyber bullying. This study provides a theoretical foundation for the assessment and intervention of both forms of bullying among middle school students. Exploring the internal correlation and interaction between cyber and traditional bullying is of great significance for the theoretical development and educational practice related to cyberbullying.

**Keywords:** middle school students, traditional bullying, cyberbullying, comparative characteristics

## 1. Introduction

### 1.1. From playground to cyberspace: The emergence of bullying

Bullying is a subtype of aggressive behaviour characterised by an imbalance of power, numerical superiority and repeated intent to harm [1]. On school campuses it is a daily occurrence. Survey data show that 22.8 % of primary-school pupils are bullied “often” or “very often”; although the figure drops in junior-high, 11.9 % of students still report frequent victimisation and 9.1 % admit to frequent perpetration, with 5.3 % severe victims and 3.8 % severe bullies [2].

The diffusion of the Internet and mobile communication has produced a new variant—cyberbullying—defined as the use of e-mail, instant messages, web pages, polls or chat rooms to harass or intimidate. In China, 96.8 % of minors are already online and active on social platforms, making cyberbullying a 24/7 risk [3]. A UK national survey by the NSPCC likewise found that one in five 11- to 16-year-olds had been cyber-victimised, confirming that adolescents worldwide are the prime targets of online abuse [4].

### 1.2. Research gap and aims: Comparing the structure of the two forms

Compared with three decades of research on traditional bullying, empirical work on cyberbullying is still nascent. Studies inevitably build on earlier offline models, so overlap between the two forms is assumed, yet findings diverge. Livingstone & Helsper [5], for example, showed that the strongest predictor of cyber-victimisation is prior online perpetration, and that traditional bullies are the most likely to become cyber-bullies. Regardless of modality, both forms predict anxiety, depression, low self-esteem, suicidality, and somatic complaints such as headache and sleep disturbance, undermining academic and psychosocial development [6].

Within the Chinese literature, however, comparative studies that explicitly contrast the factorial structure of traditional versus cyber bullying among middle-school students remain scarce. The present research addresses this gap by developing parallel instruments and testing whether traditional bullying dimensions (physical, verbal, relational) map onto emergent cyber dimensions (verbal, relational, rights-based) and whether offline behaviour forecasts online involvement. Clarifying these structural relations is essential for evidence-based prevention and intervention in both arenas.

To date, domestic research has concentrated on mapping the structure, prevalence and correlates of cyberbullying among adolescents, yet empirical studies that directly compare the factorial architectures of traditional versus cyber bullying in middle-school students remain scarce. Because teachers are front-line responders, they need a clear, developmental picture of how offline and online bullying differ; without it, intervention is often blunt. The present study therefore administered a self-report questionnaire and used exploratory and confirmatory factor analyses to derive and validate parallel structural models for the two bullying modalities. The resultant instruments supply precise assessment indicators for each form of bullying and furnish an evidence-based framework for targeted prevention and intervention in the middle-school context.

## **2. Method**

### **2.1. Data collection and semi-structured interviews**

An extensive literature review first generated an initial pool of indicators and representative items. Semi-structured interviews were then conducted with 15 middle-school students (8 girls, 7 boys) after explaining the purpose and obtaining consent to audio-record. Transcripts were collated to ensure content coherence.

### **2.2. Item pool and pilot questionnaire**

Based on the literature and interview data, the following structure was drafted: Traditional bullying / victimization: physical, verbal and relational sub-dimensions (3 each). Cyber bullying / victimization: verbal, relational and rights-based sub-dimensions (3 each). Operational definitions were written for every subscale and items were drafted accordingly. Twelve applied-psychology lecturers and post-graduates rated dimension-fit and wording; items were retained, revised or dropped. Both the traditional and cyber forms finally comprised 21 items each, randomly ordered and rated on a 5-point Likert scale: 1 = never, 2 = almost never, 3 = sometimes, 4 = often, 5 = always.

### **2.3. Preliminary testing and revision**

Stratified random sampling was used: one class per grade (7, 8, 10, 11) in three Liaoning schools (Shenyang and Liaoyang). Questionnaires were completed during self-study periods; 800 booklets were returned and 740 retained after screening. Exploratory factor analysis deleted items loading < .30. The final pilot set contained 20 items for traditional bullying and 21 items each for traditional victimization, cyber bullying and cyber victimization, yielding the formal Middle-School Traditional Bullying/Victimization Questionnaire and Cyber Bullying/Victimization Questionnaire.

### **2.4. Formal administration**

Again using stratified random sampling, 2 518 students (grades 7, 8, 10, 11; 1 164 boys, 1 354 girls) were recruited from four schools in Shenyang, Liaoyang and Chaoyang. After group administration during class, 2 448 valid protocols remained (traditional bullying  $n = 612$ ; traditional victimization  $n = 620$ ; cyber bullying  $n = 611$ ; cyber victimization  $n = 605$ ), with approximately equal numbers from each grade.

### **2.5. Statistical analysis**

Exploratory factor analysis (EFA) was performed with SPSS 16.0 (principal-axis factoring, oblimin rotation); confirmatory factor analysis (CFA) was run in AMOS 7.0.

### 3. Results

#### 3.1. EFA outcomes

Sampling adequacy: all KMOs  $\geq 0.76$  and Bartlett tests significant ( $p < .001$ ), indicating shared variance suitable for factoring. Extraction criteria: eigen-value  $> 1$ , cumulative variance, communalities  $\geq .35$ , and cross-loadings  $< .35$ . Traditional victimisation: 3 factors, 47.68 % variance, loadings .489–.774.F1 physical victimisation (4 items).F2 verbal victimisation (4 items).F3 relational victimisation (5 items) .Traditional bullying: 3 factors, 46.80 % variance, loadings .384–.724.F1 physical bullying (4 items).F2 verbal bullying (5 items).F3 relational bullying (4 items).Cyber victimisation: 3 factors, 47.35 % variance, loadings .451–.780.F1 verbal cyber-victimisation (4 items).F2 relational cyber-victimisation (3 items).F3 rights-based cyber-victimisation (3 items).Cyber bullying: 3 factors, 48.86 % variance, loadings .367.767.F1 verbal cyber-bullying (4 items).F2 relational cyber-bullying (4 items).F3 rights-based cyber-bullying (3 items) Summary in Table 1.

Table 1 Factor Loadings for Traditional and Cyber Bullying among Middle-School Students

	Traditional Victimization			Traditional Bullying			Cyber Victimization			Cyberbullying		
	Phy Victim	Verbal Victim	Relational Victim	Phy Bully	Verbal Bully	Relational Bully	Verbal C-Victim	Relational C-Victim	Rights C-Victim	Verbal C-Bully	Relational C-Bully	Rights C-Bully
	0.533			0.724			0.780			0.683		
	0.721			0.631			0.529			0.522		
	0.667			0.622			0.506			0.634		
	0.774			0.656			0.596			0.767		
		0.489			0.384			0.719			0.367	
		0.552			0.729			0.684			0.762	
		0.702			0.536			0.665			0.671	
		0.696			0.504				0.639		0.693	
			0.687		0.563				0.684			0.451
			0.682			0.583			0.451			0.585
			0.610			0.686						0.761
			0.654			0.682						
			0.691			0.522						
Contribution Rate / %	22.697	12.674	12.489	22.557	14.232	10.007	24.522	12.058	10.770	22.325	14.310	12.225

#### 3.2. Reliability

Internal-consistency (Cronbach’s  $\alpha$ ) and two-week test–retest coefficients are reported in Table 2. All values range from 0.517 to 0.915, indicating satisfactory reliability for each scale.

Table 2 Reliability Indices for Each Subscale and the Full Questionnaires

Item	Internal Consistency	Test-Retest Reliability
Traditional Physical Bullying	0.654	0.860
Traditional Verbal Bullying	0.600	0.822
Traditional Relational Bullying	0.680	0.894
Traditional Bullying	0.732	0.915
Traditional Physical Victimization	0.630	0.706
Traditional Verbal Victimization	0.592	0.776
Traditional Relational Victimization	0.641	0.835
Traditional Victimization	0.749	0.865
Cyber Physical Bullying	0.613	0.654
Cyber Verbal Bullying	0.637	0.814
Cyber Relational Bullying	0.522	0.838
Cyberbullying	0.708	0.865
Cyber Physical Victimization	0.673	0.807
Cyber Verbal Victimization	0.647	0.740
Cyber Relational Victimization	0.517	0.802
Cyber Victimization	0.724	0.857

### 3.3. Confirmatory Factor Analysis (CFA)

The 3-factor structures derived from EFA were tested with AMOS 7.0 on the full sample. Each latent factor was indicated by its corresponding items. Key fit indices are summarised in Table 3; all values indicate acceptable-to-good model fit for every questionnaire.

Table 3 Fit Indices for the Traditional and Cyber Bullying Models among Middle-School Students

Item	$\chi^2$	Df	$\chi^2/df$	GFI	AGFI	CFI	IFI	RMSEA
Traditional Victimization	159.548	62	2.573	0.926	0.892	0.859	0.862	0.070
Traditional Bullying	122.824	62	1.981	0.947	0.922	0.898	0.901	0.056
Cyber Victimization	81.536	33	2.471	0.955	0.926	0.811	0.820	0.068
Cyberbullying	112.887	42	2.688	0.940	0.905	0.818	0.823	0.073

### 3.4. Predictive effect of traditional bullying on cyber bullying

Hierarchical regression was used to test whether traditional bullying predicts cyber involvement after controlling for demographics. All predictors were standardised; gender (male = 1, female = 0) and grade were entered in Step 1. Predicting cyber victimization. After controlling for gender and grade, both traditional victimisation ( $\beta = 0.374$ ,  $p < .001$ ) and traditional bullying perpetration ( $\beta = 0.120$ ,  $p < .001$ ) significantly predicted cyber victimisation. Predicting cyber bullying perpetration. Controlling for the same covariates, traditional victimisation was non-significant ( $p > .05$ ), whereas traditional bullying perpetration strongly predicted cyber bullying perpetration ( $\beta = 0.495$ ,  $p < .001$ ). Thus, being victimised or bullying others offline increases the likelihood of subsequent cyber victimisation, whereas only prior traditional perpetration raises the risk of becoming an online bully.

## 4. Discussion

### 4.1. Comparing the structures of traditional and cyber bullying

Exploratory factor analysis showed that: Traditional bullying perpetration consists of physical, verbal and relational bullying; traditional victimisation comprises the corresponding physical, verbal and relational victimisation factors. Cyber bullying perpetration is made up of verbal, relational and rights-based bullying; cyber victimisation contains verbal, relational and rights-based victimisation.

All subscales met conventional reliability criteria. Confirmatory factor analysis indicated good overall fit for both the traditional and cyber models, with acceptable factor loadings of the observed indicators on their latent constructs.

Our three-factor structures partly support Liu Liqiong et al.'s four-dimensional model (physical, verbal, relational and cyber bullying). The proliferation of smartphones and tablets, however, has turned the Internet into a distinct bullying medium; hence we treated "cyber" as a separate modality rather than an additional content category. Earlier Chinese instruments usually list ICT channels (SMS, IM, e-mail, chat-rooms, web pages) or behavioural contents (threats, deception, exposure, exclusion). For example, Song (2008) classified cyberbullying into six channels [8], later reduced by Liu et al. (2012) to five [9]. We argue, however, that medium and type are conceptually different. Drawing on Bayram et al.'s (2011) Cyber Victim and Bullying Scale—cyber forgery, cyber verbal bullying and hiding identity [10]—and adapting for local language and culture, we retained three bullying types rather than enumerating technologies.

Comparing the two modalities, verbal and relational (bullying/victimisation) appear in both worlds, whereas physical bullying is unique to offline contexts and rights-based bullying to the anonymous online arena. This divergence underscores the covert nature of cyber aggression. Because adolescence is the peak period for cyber-bullying involvement [11], delineating these structures provides both a valid assessment tool and a blueprint for targeted prevention and intervention in middle schools.

### 4.2. Predictive paths from traditional to cyber bullying

Previous work has treated cyber-bullying as an extension of traditional bullying [12] and shown that involvement in offline bullying forecasts online involvement [13]. Our findings corroborate and refine this view: both offline victimisation and perpetration predict subsequent cyber-victimisation, whereas only traditional perpetration predicts cyber-perpetration. Although cyber-bullying has unique features—and can occur independently (some adolescents who never bully face-to-face do bully online) [15]—the two forms share substantial overlap. Victims offline are often victims, and sometimes perpetrators, online [14]. Yet the reverse pathway—cyber-bullying evolving into traditional bullying—has rarely been documented [16], raising the question of whether the relation is unidirectional or bidirectional. Because research on cyber-bullying is still nascent, clarifying its linkage with traditional bullying is essential. Doing so will allow us to translate three decades of offline-bullying theory and intervention into the digital arena, identify at-risk youth more accurately, and ultimately reduce the harm online aggression inflicts on adolescents.

## 5. Conclusion

It must be emphasised that cyber-bullying is anonymous, covert and hard to detect; parents and teachers usually become aware only after serious harm has occurred. Young people often remain silent for fear of losing access to phones or computers, so the damage is deep-rooted, persistent and potentially devastating. Preventing cyber-bullying before it starts, and intervening effectively when it is spotted, is therefore essential for healthy adolescent development.

In daily practice educators should routinely observe and measure both traditional and online aggression. Because the two forms are linked, we can use involvement in traditional bullying as an early-warning signal: any student who bullies or is victimised offline should be screened for similar experiences online. Such proactive monitoring is the surest way to keep cyber-bullying from ever leaving the cradle.

## 6. References

- [1] Li, J. (2009). Cyber-bullying among adolescents: Problems and countermeasures. *China Youth Study*, (8), 25-28.
- [2] Meng, Y. H., & Zhu, L. Q. (2010). Cyber-bullying and traditional bullying. *Chinese Mental Health Journal*, 24(11), 880-884.
- [3] Li, W. G., Shen, J., & Ji, W. M. (2012). Blue book on youth: Report on new media use by Chinese minors (2011-2012). Beijing: Social Sciences Academic Press, 2-5.
- [4] Chen, C. F., & Xu, Z. X. (2013). Cyber-bullying and its prevention: Protecting minors in the Internet era. *China Radio & TV Academic Journal*, (12), 27-30.
- [5] Schneider SK, O' Donnell L, Stueve A, Coulter R. Cyberbullying, school bullying, and psychological distress: A regional census of high school students[J]. *American Journal of Public Health*,2012(102):171-177.
- [6] Livingstone S, Helsper E. Balancing opportunities and risks in teenagers' use of the internet: The role of online skills and internet self-efficacy[J]. *New Media and Society*,2010(12):309-329.
- [7] Wanda Cassidy, Chantal Faucher, Margaret Jackson. Cyberbullying among youth: A comprehensive review of current international research and its implications and application to policy and practice[J]. *School Psychology International*,2013(5):1-38.
- [8] Song, X. (2008). An investigation of cyber-bullying behaviors and intervention models among senior-high-school students: Three schools in Baoshan District, Shanghai as examples [Master's thesis, East China Normal University], pp. 12–15.
- [9] Liu, L. Q., Xiao, F., Rao, Z. H., et al. (2012). Characteristics of cyber-bullying behaviors among secondary-school students. *Chinese Journal of School Health*, 33(8), 942–944.
- [10] Bayram Cetin, Erkan Yaman, Adem Peker. Cyber victim and bullying scale: A study of validity and reliability[J]. *Computers & Education*,2011(57):2261-2271.
- [11] Smith PK. Cyberbullying and cyberaggression [M]. New York: Routledge, 2012: 145-147.
- [12] Ybarra ML, Mitchell K J. Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics[J]. *Journal of Child Psychology and Psychiatry*, 2004(45); 1308-1316.
- [13] Pornari C D, Wood J. Peer and cyber aggression in secondary school students: The role of moral disengagement, hostile attribution bias, and outcome expectancies [J]. *Aggressive Behavior*, 2010(36): 81-94.
- [14] Smith PK, Mahdavi J, Carvalho M, et al. Cyberbullying: Its nature and impact in secondary school pupils[J]. *Journal of Child Psychology and Psychiatry*,2008(49):376-385.
- [15] Hinduja S, Patchin J. Personal information of adolescents on the Internet: A quantitative content analysis of My Space[J]. *Journal of Adolescence*,2008(31):125-146.
- [16] Li Q.A Cross-Cultural Comparison of Adolescents' Experience Related to Cyber bullying[J]. *Educational Research*, 2008,50 (3):223-234.