Research article

The effect of parenting styles on adolescent bullying behaviours in China: The mechanism of interpersonal intelligence and intrapersonal intelligence

Eelin He [a], Xiaomei Ye [b,*], Wanying Zhang [c]

[a] *College of International Education at Shanghai University, China*
[b] *Graduate School of Education at Peking University, China*
[c] *Beijing Normal University, China*

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ABSTRACT

Bullying is a problematic public behaviour of great concern worldwide, which occurs commonly in China. Parenting and emotional intelligence have previously been verified as crucial aspects in determining the bullying behaviours of adolescents. However, evidence of the interactive effect of these vital factors needs to be more extensive. This study attempts to analyze the relationships and mechanisms of parenting on bullying through emotional intelligence, which consists of interpersonal and intrapersonal intelligence. Based on Chinese education panel survey data of 8730 adolescents, this paper used OLS regression and SEM methods to estimate the impact and mechanisms of parenting styles on bullying behaviours among adolescents. High-demand and responsive parenting styles can significantly reduce adolescents' bullying behaviours. Intrapersonal and interpersonal intelligence are important mediating variables, and parenting with high demandingness and high responsiveness can significantly improve the interpersonal intelligence of adolescents, thereby reducing children's bullying behaviour. Although low levels of intrapersonal intelligence would increase bullying behaviours in adolescents, high demandingness and high responsiveness of parenting can significantly improve adolescents' intrapersonal intelligence. Parents can reduce adolescents' bullying behaviours by increasing emotional responses and normative requirements. This result provides a new perspective on the solution to the problem of youth bullying.

1. Introduction

Bullying is a type of aggressive behaviour that involves an imbalance of power whereby aggressors deliberately and repeatedly torment or harass a less dominant person(s) [1,2], which causes negative impacts on psychological well-being and prosocial skills for both perpetrators and victims [3]. Bullying behaviours often manifest as verbal, physical, and relational bullying [1]. Starting with Olweus, numerous scholars have focused on the impact of school factors on student bullying [1,4], for example, the effect of the teacher on students' bullying [4]. Several school-based interventions to prevent bullying have been developed internationally, including school policy and climate changes, classroom rules, curriculum, and parent engagement [5]. Despite efforts to counteract bullying in schools, it remains an emerging problem in China. According to a new report, bullying incidences are almost 1/3 of all

pre-college types [6], and more male students than females were found to be both perpetrators and victims of bullying [7]. Moreover, a recent Chinese study of students revealed that the rate of lifetime bullying victimization is up to 59.7% [8]. Therefore, additional research is required to assess the influencing factors of school bullying.

As parents are essential people in the development of children, the Chinese government attaches great importance to the role of parents in school bullying. The Family Education Promotion Law of the People's Republic of China was enacted in 2021, which addresses guardianship duties and responsibilities of parents. Parenting styles influence their children's manners, especially affection [9–11]. Bronfenbrenner's theory suggests that a person's psychological development, including emotion regulation and emotional responses to experience, is governed by multiple factors, such as parenting [12]. Parenting styles are parents' socialization practices (including emotion and attitudes), which classified parenting styles as authoritative, permissive, authoritarian, and neglectful based on two dimensions: demandingness and responsiveness [13–15]. Previous research has revealed that children's bullying is related to a range of parenting behaviours [16–19], and the influence of parenting on children may differ by gender and SES [20,21]. Children who receive warmer and more affection rarely commit bullying behaviours [22]. Conversely, children are likelier to show aggressive behaviours if their parents punish them frequently [23].

However, how does parenting style affect children's bullying? Recently, evidence from multiple studies shows a growing interest in exploring the influence mechanism of parenting style on bullying [24]. For example, Chao et al. (2017) found that the influence of parenting on bullying can be mediated by self-control [25]. The ability of self-control is important content of emotional intelligence. Emotional intelligence is a protective factor against victimization and school bullying [26–29], influenced by parenting [30]. Starting from the concept of emotional intelligence proposed by Gardner (comprised of intrapersonal intelligence and interpersonal intelligence), John Mayer and Peter Salovey define emotional intelligence by extending these abilities to five main domains: awareness of personal emotions, emotion management, self-motivation, identifying the emotions of others and handling relationships [31]. Intrapersonal and interpersonal intelligence are forms of emotional intelligence to Bar-On and are essential to mediate bullies [32]. Interpersonal intelligence is recognizing and understanding other people's moods, desires, motivations, and intentions [33]. Intrapersonal intelligence is the ability to recognize and understand one's emotions, strengths, and weaknesses and the ability to solve thinking [33].

Although previous studies have confirmed the relationships between parenting styles and adolescents' bullying [34–36], the specific parenting mechanisms for bullying through interpersonal and intrapersonal intelligence are unclear. Moreover, studies have also ignored the influence of parents' demandingness and responsiveness on adolescents' bullying, which is the core classification of parenting. Moreover, many parenting behaviour studies focus on Western samples [9], and few empirical studies are based on small samples [37]. As China is the world's most populous country, bullying is a severe health issue. Research from China will provide further insight into the impact of different parenting styles on bullying while providing an empirical discussion of this issue.

1.1. Literature review and hypothesizes

1.1.1. Parenting and bullying

Most of the literature on the direct effects of parenting styles on bullying has focused on two aspects. As a predictor, positive parenting significantly protects against bullying involvement [2], while negative parenting style will increase students' bullying behaviours [38]. One aspect of previous research has examined the effect of specific dimensions of parenting on bullying [16,22]. For example, based on the demand-acceptance dimension, a Turkish study of 742 secondary school adolescents found that less demanding and accepting parenting is an essential predictor of bullying. In contrast, highly demanding parenting reduces the likelihood of bullies or victims engaging in bullying [39].

Another aspect of the literature has focused on the impact of specific types of parenting on bullying in different countries and regions [40]. Most studies have pointed out that authoritarian parenting is significantly associated with aggressive behaviours in children, which leads to bullying [41]. A study has shown that authoritative parenting can significantly reduce adolescents' bullying behaviours [42], while studies from Hong Kong and Jamaica have indicated that authoritative parenting styles harm bullying behaviour [43,44]. The study by Cerezo et al. [45] of 1,200 adolescents aged 10–14 in the Netherlands found that bullies mostly come from neglectful parenting families. However, according to studies by Jeynes [46]and Christie-Mizell et al. [47], children with neglectful parents also quickly become victims. The results of an Iranian study found children with permissive parenting at higher risk of being bullied and victimized [48]. However, studies from other countries draw the opposite conclusions [49]. Therefore, this paper puts forward the first research hypothesis:

H1.   Parenting style is significantly associated with adolescents' bullying behaviours.

1.1.2. The role of interpersonal and intrapersonal intelligence

A new trend in bullying research has focused on the influence of emotional intelligence in school bullying [26,27]. Emotional intelligence is one of the human beings' crucial bits of intelligence [50,51]. Goleman, the inventor of emotional intelligence, proposed emotional intelligence as a predictor of future success [51]. Although his claim may be exaggerated, research confirms the relationship between emotional intelligence and children's developmental outcomes, such as subjective well-being [50], mental ability, positive personality traits [52], and physical and psychological health [53]. Gardner emphasizes that human intelligence is multiple, including verbal, spatial, logic-mathematical, motor, musical, interpersonal, and intrapersonal intelligence [54]. Interpersonal intelligence and intrapersonal intelligence provide the conceptual basis for the emotional intelligence model.

In addition, researchers investigated the relationship between interpersonal intelligence and intrapersonal intelligence with

bullying and parenting. Interpersonal and intrapersonal intelligence is vital in the relationship between parenting style and school bullying [55]. Interpersonal intelligence is the ability of an individual to perceive and differentiate the emotions sensitively, will, and experiences of others [56]. Negative parenting styles are closely associated with poor interpersonal relationships and antisocial behaviour during a child's socialization process. Garaigordobil [57] used a sample of 2283 participants aged 12–17 years from the Basque Country (northern Spain) and found that adolescents with low intrapersonal emotional intelligence had less empathy, self-esteem, and their parents had a low level of acceptance-affection towards their children. They also engaged in more bullying/cyberbullying and antisocial behaviours. Nevertheless, research exploring the association between parenting and trait emotional intelligence is limited [58].

On the one hand, according to the social-ecological perspective, individual behaviour is closely associated with intra-and inter-personal resources [59]. Negative parenting styles are significantly predictive of children's negative self-core beliefs and thoughts [60], which is detrimental to developing interpersonal and intrapersonal intelligence. On the other hand, according to social capital theory, children with higher interpersonal and intrapersonal intelligence respond to problems more positively and normative way. However, children with lower interpersonal and intrapersonal intelligence are more vulnerable and less resilient to frustration in their interpersonal networks, making them more likely to be involved in school bullying [61,62]. Therefore, this paper puts forward the second research hypothesis:

H2.   The interpersonal intelligence and intrapersonal intelligence can moderate the link between parenting style and child bullying behaviours.

H2a.   The interpersonal intelligence can moderate the link between parenting style and child bullying behaviours.

H2b.   The intrapersonal intelligence can moderate the link between parenting style and adolescents' bullying behaviours.

1.2. The current study

This study had a twofold aim based on previous studies and theoretical considerations. First, we try to identify the effects of parenting styles on specific bullying behaviours. As mentioned above, demandingness and responsiveness are core to classifying parenting, and personal resources have been shown to affect bullying. Therefore, we explored the mechanism of demandingness and responsiveness to bullying, mediated by interpersonal and intrapersonal intelligence.

2. Method

2.1. Participants

The data in this paper come from the China Education Panel Survey (CEPS), designed and implemented by the National Survey and Data Center (NSRC) of the Renmin University of China. The National Survey Research Center Ethics Committee at Renmin University in China reviewed and approved this study involving human participants. Respondents gave informed consent to participation before completing the survey. Moreover, the survey data has been anonymized following legal norms.

The survey aims to reveal the effects of family, school, community, and macrolevel social structures on individual educational output. The survey uses the population's average education level and the proportion of the floating population as stratum variables to extract 28 county-level units from across the country as survey sites. Using the sampling method with proportional probabilities and scales in stages, 19,487 seventh- and ninth-grade adolescents are randomly selected from the selected county-level units to conduct surveys. A second follow-up survey was conducted from 2014 to 2015 with a follow-up rate of over 90%. The questionnaire collected adolescents' demographic information, family backgrounds, bullying behaviours, and other information, supporting our empirical analysis. The final sample of 8,730 adolescents who participated in the two rounds of the investigation was selected for analysis. Their average age is 12.5 years old.

2.2. Instruments

Dependent variable. In this study, bullying included verbal and physical bullying. There are three items were used to assess the dependent variable of bullying behaviours: "In the past year, how often have you engaged in cursing or swearing?", "In the past year, how often have you engaged in quarreling?", "In the past year, how often have you engaged in fighting?" and "In the past year, how often have you bullied submissive classmates?". Each item was rated on a 5-point Likert-type scale with response options ranging from never to always (0 = never, 1 = seldom, 2 = sometimes, 3 = often, and 4 = always). We used standardized processing to generate four indicators, namely, "swearing," "quarreling with others," "fighting with others," and "bullying submissive classmates," to measure adolescents' bullying behaviours.

Independent variable. Parenting style includes four types: permissive parenting, authoritarian parenting, authoritative parenting, and neglectful parenting. This division is mainly based on Maccoby and Martin's research [15], which categorized parenting into demandingness and responsiveness. In the survey questions, parents' demandingness is mainly measured based on parents' super-vision of their children's homework habits, test scores, school performance, friend relationships, dress, and internet use. Its reliability coefficient is 0.742. We summed the scores for these six questions and generated high and low categories based on each score. Parents' responsiveness to their children mainly reflects 14 aspects: helping one's child with assignments, guiding learning, discussing school

situations with one's children, caring about one's children's teacher-adolescent relationships, caring about one's children's friends, listening to one's children's worries, resolving one's children's troubles, eating with one's children, visiting museums with one's children, watching movies with one's children, encouraging one's children to build self-confidence, and so on. Its reliability coefficient is 0.859. We also summed these 14 question scores and generated high and low categories for the responsiveness dimension. Based on the questions, low responsiveness with low demandingness denotes neglectful parenting, low responsiveness with high demandingness denotes authoritarian parenting, high responsiveness with low demandingness denotes permissive parenting, and high responsiveness with high demandingness denotes authoritative parenting. 10% of the sample show permissive parenting, 27% show authoritarian parenting, 24% show neglectful parenting, and 39% show authoritative parenting.

Mediators. In this study, adolescents' intrapersonal and interpersonal intelligence were two mediators in the effect of parenting styles on adolescent bullying behaviours. According to Barron's research [32], intrapersonal intelligence mainly reflects one's emotional self-awareness, and interpersonal intelligence is composed of empathy and interpersonal relationships. Based on Barron's [32]EQ-I measurement framework and the question items in the database used to measure adolescents' intrapersonal intelligence in this article:1. In the last seven days, I have felt depressed; 2. In the last seven days, I have felt blue; 3. In the last seven days, I have felt unhappy; 4. In the last seven days, I have felt bored; 5. In the last seven days, I have felt sad; 6. I was bored at school.

Each item responded on a 5-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). Its reliability coefficient is 0.874. After the six items are summed and averaged, normalization is performed to generate the "intrapersonal intelligence" indicator. The larger the value is, the lower the intrapersonal intelligence level of the youth. The following three items measure interpersonal intelligence: 1. I feel close to the people at this school; 2. Most of the adolescents in the class were friendly to me; 3. The class I am in has a good atmosphere. Each item ranges from 1 to 5, to strongly disagree to agree strongly. Its reliability coefficient is 0.748. After the three items are summed and averaged, normalization is performed to generate the "interpersonal intelligence" indicator. The larger the value is, the higher the level of interpersonal intelligence of adolescents.

Control variables. Many studies have shown that an adolescent's gender, number of siblings, years of parental education, family economic and social background, and other factors may influence an adolescent's bullying behaviours [24,63,64]. We control this information during the estimation process. Control variables include demographic and family background features of adolescents, such as an adolescent's gender, number of siblings, boarding adolescent status, hukou status, home address, left-behind status, local dialect mastery, parents' years of education, family economic and social background, migration and mobility status, parents' relationship, and the parent-child relationship. Table 2 describes the variables.

2.3. Data analysis model

2.3.1. Estimation model

OLS regression was used to explore the influence of parenting styles on adolescents' bullying behaviours. Such estimation may have "reflection" and "self-selection" problems. "Reflection" refers to problems resulting from interactions between the dependent and independent variables, which means that reverse causality bias is encountered in the estimation process. Because it is difficult to distinguish whether adolescent characteristics influence parenting styles or affect adolescent bullying behaviours, biased and inconsistent parameter estimates result when simply using parenting styles to explain an adolescent's bullying behaviours. Adolescents' prior performance is often controlled to solve this problem. The self-selection problem results from specific behaviour by an adolescent or his (her) parents and is usually mitigated or eliminated by controlling more information. Therefore, in estimating the

Table 1
Description of variables.

Variable	Sample	M	SD	Min	Max
Swearing	8730	−0.002	0.999	−1.241	2.835
Quarreling	8730	−0.004	0.993	−0.951	3.597
Fighting	8730	−0.011	0.989	−0.490	5.227
Bullymates	8730	−0.009	0.981	−0.293	7.406
Intrapersonal Intelligence	8730	−0.011	0.991	−1.340	3.526
Interpersonal intelligence	8730	0.008	0.992	−3.023	1.260
parental education	8730	10.920	3.037	0	19
Local Dialect Mastery	8730	4.088	0.500	0	1

Gender (female)	48.40%		Only one child	44.65%
Boarding Adolescent Status	30.40%		Local	96.67%
Hukou (rural)	52.55%		Left-behind status	22.61%
Parents often quarrel	9.69%		Poor parental relationship	9.98%
Migration Status			Family Economic Status	
Local	82.02%		Poor	20.86%
Intraprovincial Mobility	8.56%		Moderate	73.22%
Interprovincial Mobility	9.43%		Rich	5.92%
Relationship with father			Relationship with mother	
Not Close	4.18%		Not Close	2.07%
Fair	40.63%		Fair	25.13%
Very Close	55.19%		Very Close	72.79%

effect of parenting styles on adolescent bullying behaviour, this paper controls for more information on adolescent and family characteristics to address self-selection problems involved in estimations and controls for adolescents' prior performance to solve the reflection problem. In addition, school-fixed effects are used to reduce estimation bias. The estimation model is shown in equation (1):

$$Y = \beta_1 + \beta_2 P + \beta_2 Y_{t-1} \sum_{k=1}^{k} \alpha_k X_k + S + \mu \qquad (1)$$

In equation (1), Y indicates the adolescent's bullying behaviour, and P indicates the parent's parenting style. Indicates the adolescent's bullying behaviour in the previous period. It is a matrix of adolescent-level covariates, including demographic variables such as an adolescent's gender, age, household registration, years of parental education, family socioeconomic status, number of siblings, residence with parents, and other control variables shown in Table 1. S denotes school fixed effects.

2.3.2. Mechanism

Interpersonal and intrapersonal intelligence are the conceptual bases of emotional intelligence [65], which are essential factors affecting bullying in schools [26,27]. Parenting styles can impact adolescents' emotions and interpersonal interactions [66,67]. In addition, research has found significant positive correlations between parenting style and children's emotional intelligence and peer communication ability [38]. Therefore, this paper constructs a structural equation model to explore whether parenting affects adolescent bullying behaviour through adolescent intrapersonal intelligence and interpersonal intelligence, as shown in Fig. 1.

3. Results

3.1. Influence of parenting styles on adolescents' bullying behaviours

Table 2 shows that parenting styles significantly affect adolescents' bullying behaviours. Unlike neglectful parenting, permissive, authoritarian, and authoritative parenting can significantly reduce children's bullying behaviours. Relative to adolescents with neglectful parents, adolescents with authoritarian, permissive, and authoritative parents swear significantly less by 0.201, 0.256, and 0.388 standard deviations, respectively. Relative to adolescents with neglectful parents, adolescents with authoritarian, permissive, and authoritative parents quarreled significantly less by 0.112, 0.122, and 0.217 standard deviations, respectively. Compared to adolescents with neglectful parents, adolescents with authoritarian, permissive, and authoritative parents have significantly lower standard deviations for fighting of 0.177, 0.092, and 0.212, respectively. Compared to adolescents with neglectful parents, those with authoritarian and authoritative parents bully submissive classmates significantly less by 0.097 and 0.128 standard deviations, respectively. Compared with neglect, the other three types of parenting may be more demanding or more responsive to children's emotions and, therefore, significantly less bullying behaviour.

3.2. Heterogeneity analysis

Table 3 shows the impacts of parenting styles on the school bullying behaviours of girls and boys. Swearing, quarreling, and fighting are significantly less frequent among boys with authoritarian, permissive, and authoritative parents than those with neglectful parents. Although boys with authoritarian and authoritative parents bully submissive classmates significantly less than those with neglectful parents, we found no significant difference between boys with permissive and neglectful parents. For girls, swearing is significantly less common among those with authoritarian, permissive, and authoritative parents than those with neglectful parents. For girls with authoritarian and authoritative parents, quarreling and fighting are significantly less prevalent than girls with neglectful parents. At the same time, we found no significant difference between those with permissive and neglectful parents. Regarding bullying submissive classmates, we found no significant difference between girls with neglectful parents and those subjected to the other three types of parenting.

Table 2
Impact of parenting styles on adolescents' bullying behaviours.

	Swearing	Quarreling	Fighting	Bullymates
Parenting Style (NPT as Control Group)				
APT	−0.201***	−0.112***	−0.177***	−0.097***
	(0.031)	(0.031)	(0.031)	(0.033)
PPS	−0.256***	−0.122**	−0.092**	−0.022
	(0.042)	(0.042)	(0.042)	(0.043)
UPT	−0.388***	−0.217***	−0.212***	−0.128***
	(0.031)	(0.030)	(0.031)	(0.031)
Control Variables	YES	YES	YES	YES
School Fixed Effect	YES	YES	YES	YES
Observations	8730	8730	8730	8730
R-squared	0.127	0.099	0.131	0.064

Note. ***p < 0.01, **p < 0.05, *p < 0.1. 2. APT = authoritarian parenting style, UPT = authoritative parenting style, NPT = neglectful parenting style, PPS = permissive parenting style.
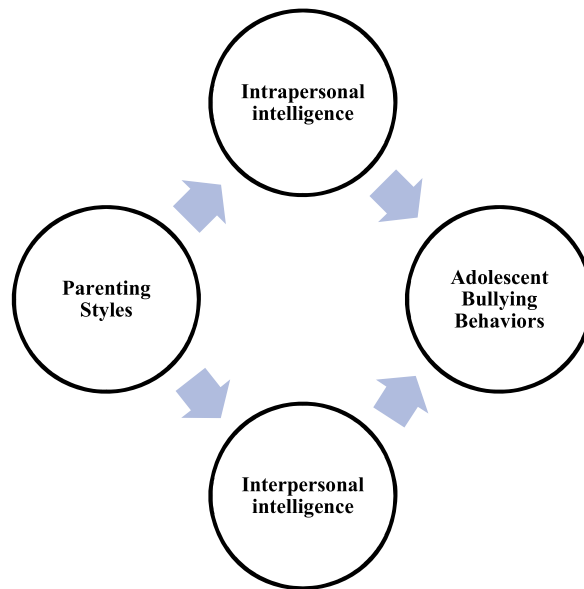
Fig. 1. The mechanism of parenting style and adolescent bullying behaviours.

Table 3
The impact of parenting styles on adolescents' bullying behaviours by gender.

	Swearing		Quarreling with others		Fighting with others		Bullying Submissive Classmates	
	Female	Male	Female	Male	Female	Male	Female	Male
Parenting Style (NPT as the Control Group)								
APT	−0.209***	−0.204***	−0.100**	−0.120***	−0.056*	−0.255***	−0.027	−0.139***
	(0.044)	(0.044)	(0.044)	(0.043)	(0.034)	(0.050)	(0.035)	(0.053)
PPS	−0.211***	−0.298***	−0.0907	−0.147**	−0.042	−0.130*	0.046	−0.072
	(0.060)	(0.060)	(0.059)	(0.060)	(0.044)	(0.069)	(0.046)	(0.072)
UPT	−0.341***	−0.442***	−0.188***	−0.246***	−0.063*	−0.332***	−0.004	−0.226***
	(0.045)	(0.044)	(0.044)	(0.043)	(0.036)	(0.050)	(0.034)	(0.050)
Control Variable	YES	YES	YES	YES	YES	YES	YES	YES
School Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Observations	4225	4505	4225	4505	4225	4505	4225	4505
R-squared	0.158	0.119	0.133	0.091	0.069	0.095	0.065	0.064

Note. 1. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$; 2. APT = authoritarian parenting style, UPT = authoritative parenting style, NPT = neglectful parenting style, PPS = permissive parenting style.

Table 4 shows the effects of different parenting styles on adolescents' bullying behaviours across three samples with different family socioeconomic backgrounds (SES). Among adolescents from economically disadvantaged families, those with authoritarian, permissive, and authoritative parents swear significantly less often than those with neglectful parents. Regarding quarreling and fighting, adolescents with authoritative parents are significantly lower than those with neglectful parents. We also found that children with authoritarian parents fight less than those with neglectful parents. For adolescents from average-income families, compared to neglectful parenting, permissive, authoritarian, and authoritative parenting significantly reduces adolescents' swearing, quarreling, and fighting, and authoritarian and authoritative parenting reduces adolescents' bullying of submissive classmates. For adolescents from affluent families, compared to those with neglectful parents, those with authoritarian and authoritative parents swear significantly less. Compared to neglectful parenting, the other three types significantly reduce adolescents' quarreling and fighting, and authoritarian parenting reduces children's bullying of submissive classmates.

3.3. Mechanism

According to the estimated results in Tables 2–4, compared with neglect parenting, the other three parenting styles that increase parents' emotional responses to their children or increase parents' demands on their children can significantly reduce the bullying behaviours of adolescents. Therefore, the core of this part considers the influence mechanism of the two dimensions of parental demands and parental responses to adolescent bullying behaviour in family upbringing. A structural equation model was constructed based on parenting style—adolescent intrapersonal intelligence/interpersonal intelligence—the mechanism of bullying behaviour. Among them, parenting style is the latest model, composed of two observational variables of parental request and parental response;

Table 4
The impact of parenting Styles on Adolescent Bullying Behaviours (by SES).

		Swearing	Quarreling	Fighting	Bullymates
	Parenting Style (NPT as Control Group)				
Low SES Group	APT	−0.177***	−0.042	−0.126**	−0.051
Observations = 1821		(0.058)	(0.059)	(0.059)	(0.060)
	PPS	−0.281**	−0.014	−0.017	0.069
		(0.114)	(0.122)	(0.118)	(0.101)
	UPT	−0.342***	−0.186***	−0.231***	−0.039
		(0.064)	(0.064)	(0.062)	(0.065)
	R-squared	0.161	0.122	0.201	0.120
Med SES Group	APT	−0.191***	−0.109***	−0.168***	−0.091**
Observations = 6392		(0.038)	(0.037)	(0.037)	(0.040)
	PPS	−0.264***	−0.131***	−0.092*	−0.050
		(0.048)	(0.048)	(0.047)	(0.049)
	UPT	−0.381***	−0.213***	−0.191***	−0.149***
		(0.037)	(0.036)	(0.037)	(0.036)
	R-squared	0.129	0.103	0.124	0.061
High SES Group	APT	−0.440**	−0.445***	−0.624***	−0.463**
Observations = 517		(0.172)	(0.159)	(0.175)	(0.212)
	PPS	−0.270	−0.288*	−0.331*	0.098
		(0.193)	(0.174)	(0.194)	(0.221)
	UPT	−0.563***	−0.271*	−0.382**	−0.148
		(0.160)	(0.140)	(0.150)	(0.155)
	R-squared	0.390	0.358	0.420	0.353

Note. 1. ***p < 0.01, **p < 0.05, *p < 0.1; 2. APT = authoritarian parenting style, UPT = authoritative parenting style, NPT = neglectful parenting style, PPS = permissive parenting style.

bullying behaviour is the observational variable, which is composed of four observational variables: swearing, quarreling, fighting, and bullying submissive classmates. Both intrapersonal intelligence and interpersonal intelligence are observed variables. Stata15 is used for simulation calculation, and the structural equation model shown in Fig. 2 is obtained through correction. After debugging, the RMSEA value is 0.067, less than 0.080, and the values of CFI and TLI are 0.946 and 0.905, which are more significant than 0.900 and reach the acceptable range, respectively, indicating that the model constructed in this paper has an excellent fitting effect. Overall, the results showed that parenting styles significantly improved adolescents' interpersonal intelligence and that interpersonal intelligence significantly reduced adolescent bullying. At the same time, it was found that low-level intrapersonal intelligence can significantly increase the bullying behaviour of adolescents. Parenting styles can significantly reduce the probability of low-level intrapersonal intelligence in adolescents.

The first path shows that interpersonal intelligence, such as empathy and cooperation among adolescents, can significantly reduce the occurrence of bullying. Furthermore, parenting style is a crucial factor affecting the development of interpersonal intelligence in adolescents. When parents have a high emotional response to their children and have strict requirements, that is, when parents can accompany and take care of their children in daily life, they pay more attention to their children's emotional state. They can significantly improve the interpersonal intelligence of adolescents, thereby reducing fights, quarrels, and other bullying behaviours.

The second path shows that low levels of intrapersonal intelligence, such as depression and anxiety, can significantly increase bullying behaviours, such as quarrels and fights, in adolescents. However, parenting styles can significantly reduce the appearance of low-level intrapersonal intelligence in children. In the parenting process, parents' increased emotional response to their children and stricter daily behaviour requirements can significantly improve the low-level state of adolescents' intrapersonal intelligence, thereby reducing adolescents' bullying. However, suppose parents lack a response to their children's emotions and neglect to discipline their
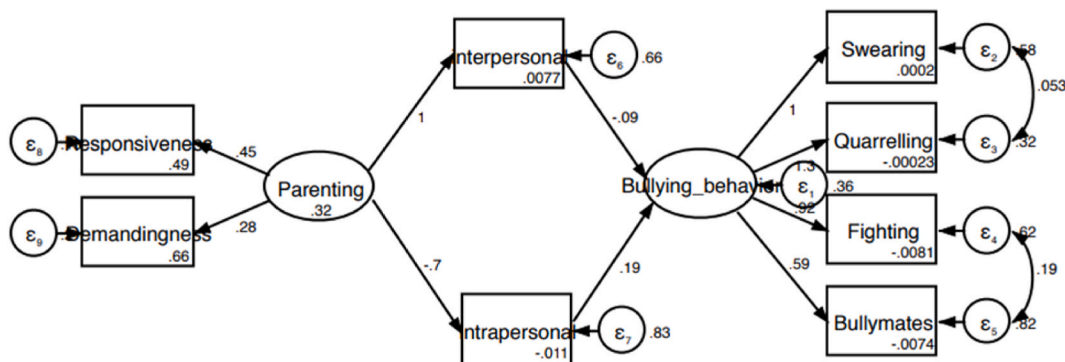

Fig. 2. The effect of parenting style on adolescent bullying behaviours.

children. In that case, it may increase the occurrence of depression and anxiety among adolescents, which in turn leads to the occurrence of adolescent bullying behaviours.

4. Discussion

The present study pioneered a comprehensive and integrative assessment of bullying among the Chinese youth population. We examined the influence of different parenting styles on adolescent bullying behaviours and explored its mechanism from the perspective of interpersonal intelligence and intrapersonal intelligence.

4.1. Interpretation of the findings

Our results have found explicitly that parenting styles are significantly associated with adolescents' bullying, which validated the first hypothesis. In contrast to neglectful parenting, authoritative, permissive, and authoritative parenting all can significantly reduce the probability of adolescent bullying behaviours such as swearing, quarreling, fighting, and bullying submissive classmates. In the three parenting families, parents interact more frequently with their children. They are more demanding and responsive to their children, so their children quickly obtain high affection and emotional objectives [2,9], which helps them identify with the rules and norms of their group and experience less bullying. Affection and emotional connections are the core of modern families and are protective factors that significantly decrease children's bullying involvement [17]. The emotional connections between parents and their children are more potent in China's highly responsive and demanding parenting contexts [10]. As neglectful parents tend to interact little with their children, they fail to meet their children's needs for belonging and affection [18], which causes many negative emotions related to bullying behaviours.

Moreover, this study further confirmed differences in bullying behaviour between boys and girls raised under different parenting styles [20]. Furthermore, for children from economically disadvantaged families, we found that those with authoritarian, permissive, and authoritative parents bully much less frequently than those with neglected parents. Increased responsiveness or demandingness for children from middle-income families can significantly reduce swearing, quarreling, and fighting. For children from economically affluent families, authoritarian parenting can significantly reduce the four types of bullying behaviours. These effects exist because parents in families of different economic statuses adopt different parenting styles. Gómez et al. [21] showed that parents in families of higher economic status have high self-efficacy and satisfaction, which are essential to children's belonging.

Consistent with the literature, parenting is a crucial factor affecting children's intrapersonal and interpersonal intelligence. Children with high responsiveness have significantly higher interpersonal intelligence and lower low-level intrapersonal intelligence, such as depression, hostility, and vulnerability. Intrapersonal and interpersonal, called emotional intelligence, are related to parental responsiveness and positive demandingness [30]. However, few studies have investigated the relationship between parenting and children's emotional intelligence. Parenting style characterized by high responsiveness was significantly related to more beneficial emotion regulation strategies in children, such as optimal active and support-seeking strategies. In this study, we confirmed that an upbeat parenting style is an essential factor affecting the development of adolescents' emotional intelligence. Parents increase their daily normative requirements and timely emotional responses to their children in the parenting process, which can significantly improve the interpersonal intelligence of adolescents. At the same time, it can significantly reduce the probability of low-level introspective intelligence, such as depression and anxiety, in adolescents, thereby reducing adolescent bullying.

Interpersonal intelligence can significantly reduce children's bullying behaviour, and low-level intrapersonal intelligence can increase children's bullying behaviour. As for emotional intelligence, children with high interpersonal intelligence and intrapersonal intelligence should have a more remarkable ability to experience empathy. Salovey and Mayer [31] pointed out empathy is vital to emotional intelligence. Empathy can promote positive contact and communication between adolescents, reducing bullying [28,44]. The research by León-Del-Barco et al. [26] and Peachey et al. [27] confirmed that emotional intelligence was negatively associated with bullying. The better their emotional regulation and understanding, the less likely pupils are to be victims of school bullying. Those with high interpersonal intelligence are also expected to be more socially adaptable and to display social skills that help individuals interact in mutually beneficial ways [65]and reduce bullying behaviours. Those with low-level intrapersonal intelligence of negative emotions, such as depression and hostility, can increase bullying behaviours [29]. Intrapersonal intelligence is essential to the adolescent's growth as an individual; it will provide the ability to understand internal aspects and implement self-discipline [66].

Furthermore, the interpersonal and intrapersonal intelligence measures moderated the link between parenting style and child bullying, validating the second hypothesis. Specifically, increasing responsiveness can improve children's interpersonal intelligence, reducing bullying behaviour. The excessive demandingness of parenting will improve the development of low-level intrapersonal intelligence and then increase the bullying behaviour of adolescents. A close parent-child relationship can be established through the parenting of high responsiveness, allowing children to feel more supported and less likely to participate in bullying [24]. Parents and children also frequently interact with high parental responsiveness, which nurtures healthy emotions [19] and reduces bullying. According to the attachment theory, when a child experiences being loved, trusted, and cared for by his or her parents, he or she internalizes this caring attitude towards the self and others [11]. However, children often experience negative emotions with high demands. In the bullying literature, researchers have contributed to knowledge regarding the role of negative emotions in the genesis of bullying. Adolescents who experience anger report more bullying perpetration [67]. In addition, bullies tend to perceive their parents as less encouraging of autonomy with high demandingness and engaging in more aggressive behaviours [38]. Bronfenbrenner [12] argued that the emotional regulation and emotional responses to experience a person are governed by parenting.

4.2. Practical implications

First, this study investigated the current situation of adolescents' bullying during the critical period of fundamental education reform in China. It verified the influence of parenting on t adolescents' bullying and its mechanisms in China. Parents usually ignore their influence on children's bullying behaviours. Our research found that parenting is essential in relieving school bullying. Moreover, scholars and governments have recognized the importance of parenting styles in bullying intervention [2]. The Law of the People's Republic of China on the Protection of Minors adds to the cyberbullying concept and tends to address guardianship duties and responsibilities of parents [6].

Second, our findings suggest that adolescents' interpersonal and intrapersonal intelligence significantly affect their bullying behaviours, which offers more empirical insights into understanding the importance of students' emotional intelligence in China's educational settings. Despite evidence that emotional intelligence makes essential contributions to student outcomes [50,51], most of the research that has been done on emotional intelligence has focused on interpersonal intelligence [55,56]. However, little attention has been paid to students' intrapersonal intelligence. This study adds to the beneficial effects of students' intrapersonal and interpersonal intelligence in eastern cultural contexts.

Third, our findings shed more light on how parenting influences adolescents' bullying, exploring the mediation roles of intrapersonal intelligence and interpersonal intelligence. Combined with the analysis results of this paper, parents can increase the emotional response to children (as love) and increase suitable demands of children's daily behaviour in the process to improve the interpersonal intelligence of adolescents and reduce depression, anxiety, hostility, and other low-level intrapersonal intelligence and then reduce bullying behaviours. Parents might consider improving children's emotional intelligence (interpersonal and intrapersonal intelligence) with regular social interactions to decrease adolescents' bullying behaviours in their daily family lives. Because interaction is a process by which individuals grasp roles. Positive social interactions contribute to improving parenting and emotional intelligence. One suggestion would be to use an immersive scenario simulation training method to implement a series of psychological or emotional experiences and develop the emotional intelligence of students [68]. Another suggestion for parents would be to strengthen cooperation with schools because emotional intelligence can be improved by curriculums and environmental construction [69,70].

4.3. Limitations and future research

Despite this study's theoretical and practical implications, several limitations should be noted. First, in terms of the study population, due to data limitations (China Education Panel Survey), this paper focuses on the impact of parenting on the bullying behavior of junior high school students, but parenting affects different age groups. In the future, we will further study the impact of parenting styles on different groups, such as primary school students and high school students. In addition, the influence of parenting on adolescent bullying may be in multi-dimensional channels. Finally, this study only explored the impact of parenting on bullying through intrapersonal intelligence and interpersonal intelligence. Future researches need to analyze other ways through more in-depth interviews, surveys, and other methods.

5. Conclusion

This study explored how parenting influenced adolescents' bullying behaviours using CEPS data. The results showed that the demandingness and responsiveness of parenting are significantly associated with adolescents' bullying behaviours. Parenting styles can reduce the incidence of bullying by modulating adolescents' intrapersonal and interpersonal intelligence. The findings of this study provide evidence for the relationship between family education and the reduction of adolescent bullying and provide a framework to explain the underlying mechanism from the perspective of emotional intelligence theory. This has important implications for reducing youth bullying and improving youth well-being.

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Author contribution statement

Erlin He: Contributed conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper. Xiaomei Ye: Contributed conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper. Wanying Zhang: Contributed reagents, materials, analysis tools or data; Wrote the paper.

Data availability statement

The authors do not have permission to share data.

Declaration of interest's statement

The authors declare no competing interests.

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Eelin He,PhD,is a lecturer in the College of International Education at Shanghai University.Her research focus on the effect of social emotional ability on children's bullying behaviours. She is interested in using evaluation as a tool to initiate and support policy-level change and improvement and in identifying mechanisms to translate research into practice.

Xiaomei Ye, Ph.D., is a postdoctoral researcher in the Graduate School of Education at Peking University. Her research focuses on Family parenting styles and teacher and student development.She is interested in using the quantitative method to investigate phenomenon in social science.

Wanying Zhang, is a PhD candidate of Beijing Normal University. Her research focus on educational leadership, students' social-emotional competence and school management improvement. She focuses on how data can be used to help principals make decisions and improvements in their schools.