

Who Are Being Bullied? – An Empirical Study on the Influence Factors of School Bullying among Chinese Middle School Students

Yongmei Hu, Jiazhe Li

Beijing Normal University, Beijing 100875, China

Abstract. This study used a large-scale random sampling survey data called *Regional Assessment of Education Quality (RAEQ)* organized by Collaborative Innovation Center of Assessment toward Basic Education Quality in 2014. The school bullying phenomenon is described from the perspective of middle school students who were bullied. Regression is used to estimate the effects of academic achievement, self-esteem, interpersonal relationship and pro-social behavior on the different types of school bullying. And the differences between urban and rural areas among the influence factors were also compared. The conclusions are as follows. First, the average frequency of verbal bullying is the highest, relational bullying is in the middle level, and physical bullying is the lowest. Second, boys are more likely to suffer school bullying weighted more in verbal and physical bullying. Third, those who are single-parent, migrant, left behind and rural origin are more vulnerable to various types of bullying. Interestingly, students from single-parent families are more likely to suffer relational bullying, while migrant and rural children are more likely to get verbal bullying. Fourth, the level of self-esteem has a U-shaped relationship with the frequencies of all kinds of school bullying, and it is more significant and clear in the relational bullying. Fifth, interpersonal relationship, including parent-child, peer-peer, and teacher-student relationship can affect the school bullying significantly, and the peer relationship has a bigger effect on the relational bullying for urban students compared with rural ones. Therefore, parents, teachers and schools should pay more attention to and even interfere with the potentially bullied students to prevent and control school bullying.

Best Evid Chin Edu 2019; 2(1):171-192.

Doi: 10.15354/bece.19.ar1039

Keywords: Middle school students; School bullying; Relational bullying; Verbal bullying; Physical bullying; Seemingly unrelated regression

Introduction

TO the frequently occurred school bullying all over the world, some countries have taken relevant preventive measures. For example, Norway has established a no-tolerance program and published the Anti-Bullying Declaration. Australia has established a special government organization to help schools solve the problem of bullying, and observe the third Friday of March every year as the national “Anti-Bullying Day”. The United States and Japan have also enacted anti-bullying laws and implemented a comprehensive anti-bullying policy. In China, the Chinese government takes into account of the importance to solve the problem of school bullying. In April 2016, the Office of the State Council’s Education Steering Committee issued the Notice on the Special Governance of School Bullying. In November 2016, The Ministry of Education and the Central Comprehensive Management Office issued the Instructions on Prevention and Control of Bullying and Violence among Elementary and Middle School Students. In April 2017, the General Office of the State Council issued the Instructions on Strengthening the Construction of Safety Risk Prevention and Control System in Kindergartens and Elementary and Middle Schools. In March 2018, during the two sessions of China (The National People’s Congress, NPC, and The Chinese People’s Political Consultative Conference, CPPCC), when interviewed by Xinhua Net and the Chinese Government Network in a program called The Voice of Ministers, the Minister of Education Baosheng Chen said that the same as the fair and quality education for migrant and left behind children being cared for, and less school bullying is one of the top ten expectations for the education. School bullying has become an urgent problem for the basic education in China. However, China has not yet conducted a comprehensive and systematic investigation of school bullying, and we still do not have accurate, comprehensive, authoritative and systematic data with in-depth professional research (Chu, 2017).

In view of these, we tried to answer following questions on the basis of the database of middle school students established by the program of Regional Education Quality and Health Examination organized by National Innovation Center on Assessment of Basic Education Quality in 2014: 1) Who is being bullied? 2) What student individual factors do affect school bullying? 3) What are the differences between urban and rural students suffering from school bullying? The eventual purpose was to provide suggestion on decision-making reference for preventing and controlling school bullying in middle school students.

Correspondence to: Yongmei Hu, Professor, Faculty of Education, Beijing Normal University, Beijing 100875, China. Email: huym0718@bnu.edu.cn

About the Author: Jiazhe Li, Doctorate Candidate, Faculty of Education, Beijing Normal University, Beijing 100875, China. Email: lijz1106@126.com

Funding: “2011 Plan” of Beijing Normal University, entitled “Research and Development of Related Factors Affecting Student Development” (No.: 370331321).

Conflict of Interests: None.

Literature Review

The Concept and Types of School Bullying

Studies on school bullying around the world began in the 1970s. Dan Olweus, a psychologist at the University of Bergen in Norway, known as the father of school bullying research found that bullying is the main form of aggressive behavior among adolescents on campus in elementary and middle schools in both Norway and Sweden. He believed that school bullying means the victim is deliberately, repeatedly and continuously encountered negative behavioral attack by one or more students, causing physical or psychological harm or discomfort (Olweus, 1994). Chinese scholar Wenxin Zhang also believed that bullying is a special type of attack that often occurs among children, especially in elementary and middle school students. At present, the general concept of school bullying has not yet been identified though, researchers have basically reached a consensus regarding the types of school bullying, including relational bullying, verbal bullying and physical bullying¹. In recent years, there has also been a new form of cyber bullying, which uses modern information network technologies such as telephone, SMS, WeChat and email to intimidate, insult, threaten and even spread false rumors, and upload pictures or videos which shame the victim publicly.

Hotspots of Related Chinese and international research

Li et al. (2017) used Knowledge Graph and other methods to analyze the literature during 2007-2016 on school bullying published in Science Citation Index Expanded (SCIE) and Social Science Citation Index (SSCI) of the Web of Science database. It found that the research hotspots of school bullying in international academic journals majorly focus on the essence and forms of school bullying, the incidence, harmfulness, causes and solutions of school bullying and so on. Chinese researchers have already introduced the experience of school bullying prevention in foreign countries. For example, Huang (2017) made a comprehensive analysis of the school bullying governance systems of seven developed countries including the United States, Britain, Australia, Sweden, Norway, Japan and South Korea. He concluded that the common features include strengthening the responsibilities of all parties, focusing on process monitoring, building various platforms to prevent and control school bullying, and paying attention to the governance of cyber bullying etc. Therefore, the causes and influencing factors have become hotspots in school bullying research, and it has strong practical significance in preventing and controlling school bullying.

The Theoretical Basis and Research Hypothesis of Preventing and Controlling School Bullying

American sociologist C. W. Mills put forward a theory regarding significant characters including parents, teachers, and peers, who appear gradually in the process of individual's socialization. With the increase of children's age, the dominant type of significant

characters generally changes from parents, teachers, and peers to other surrounding people. For middle school students, their interpersonal communication refers to the psychological and behavioral communication between themselves and the surrounding people such as parents, teachers and classmates. The main interpersonal relationships for middle school students are parent-child relationship, teacher-student relationship, and peer-peer relationship. Parents, teachers and peers are often reliable subjects who can provide students effective help when they encounter difficulties. Close parent-child relationship can help children alleviate the trouble of school bullying; and the more harmonious the teacher-student and peer-peer relationship, the less likely they are to be bullied (Gage, et al., 2014). Huang (2017) found that parental emotional support, teacher support negatively correlated with school bullying based on the data of PISA 2015 China. Ma (2016) found that students who are difficult to integrate into the class and have a poor level of peer relationship are vulnerable to school bullying. Ji et al. (2012) also found that peer relationship during children's late childhood has a positive predictive effect on bullying attacks. Children with weak skills on social interactions are vulnerable to being marginalized and being bullied in their peer group (Faris et al., 2014). Therefore, we believe that the three above-mentioned interpersonal relationships have an impact on school bullying in middle school students. In addition, related studies have found that children's prosocial behavior is related to their level of interpersonal relationships that can significantly improve the peer acceptance level (Ferguson et al., 2012). Therefore, good interpersonal relationship can make it easier to succeed in academic and less likely to be bullied. Based on this, we hereby proposed the following research hypotheses to be tested in middle school students:

Hypothesis 1: The better the parent-child relationship, the lower the probability of school bullying.

Hypothesis 2: The better the peer relationship, the lower the probability of school bullying.

Hypothesis 3: The better the teacher-student relationship, the lower the probability of school bullying.

Hypothesis 4: The higher prosocial behaviors, the lower probability of being bullied on campus.

Individual Characteristics of Students Who Suffer from School Bullying

Lifestyle Theory introduced by Hindelang in 1978 said some of the behaviors or life characteristics of the individual will increase the likelihood of being violated (Zhang et al., 2016). Accordingly, students' characteristics and behaviors will have an impact on the incidence of bullying. Studies have found that boys are more likely to be bullied than girls (Craig et al., 2009; Elgar et al, 2013). Huang (2017) found that the proportion of boys who suffer from various types of school bullying is greater than that of girls; children with lower socioeconomic status are more likely to be subject to discrimination and ridicule; the influence of gender and family socioeconomic status (SES) on the school bullying cannot be ignored. Therefore, our study takes these two factors as control variables.

There is little research on the difference of school bullying between urban and rural students. We only found two Chinese empirical studies currently by Huang and colleagues. They found that school bullying does not significantly differ between urban and rural schools. The variable Urban-Rural (UR) is not significant for students who often suffer from school bullying (Huang, 2017; Huang et al., 2018). However, these two studies did not estimate the effect of UR variable on students' suffering from different types of school bullying. Our study will further examine the difference and influencing factors of urban and rural middle school students who suffer from different types of school bullying. Therefore, we proposed the following assumption:

Hypothesis 5: Whether students coming from urban middle school have no significant predictive effect on suffering from school bullying.

Related to the variable UR, Teng et al. (2018) also found that boys whose parents work outside are more seriously bullied based on a survey of more than 100,000 elementary and middle school students across China. Some researchers believe that rural left-behind children, urban migrant children and children from single-parent families may be vulnerable to school bullying due to the indifference of family relationships or their parents' inability to give them enough care and love for work reasons (Zhou, 2017). In addition, some studies have found that bullied students usually have lower levels of self-esteem, which affects the probability of bullying (Malecki et al., 2015; Gu et al., 2003). Ma (2016) believed that students with poor academic performance may be ridiculed by teachers because they are not valued by teachers, and may be subject to discrimination and bullying by classmates. Lei et al. (2004) also found that students' academic performance is negatively correlated with school bullying, i.e. the better their academic performance, the lower the probability they will suffer from school bullying.

In sum, although some researchers believe that whether students are migrant or left-behind, whether they are from single-parent families, their self-esteem and other personality traits and academic achievements may affect their possibility of being bullied at school. However, there is still a lack of empirical research with systematic design from the perspective of individual characteristics of students. In addition, the analysis of the difference between urban and rural middle school students regarding the influence factors of suffering from different types of school bullying still needs to be further explored. Therefore, our study will conduct an empirical study on various factors that may affect school bullying on the individual level of the student, in order to explore the key factors affecting the various types of school bullying.

The previous studies, especially Chinese research on school bullying, were mostly based on theoretical analysis. The number of empirical studies using quantitative methods is limited, and the sample size and sample representativeness of such studies were debatable. Relevant conclusions require further testing from high-quality research using large-scale random sample. In addition, many international studies have begun to pay attention to whether the same variable has different effects on different types of school bullying. As studies have found that girls are more vulnerable to relationship bullying and verbal bullying (Veenstra et al., 2005), while boys are more likely to be physically bullied (Peets et al., 2006). In China, such kind of research is relatively lack-

ing, it is important to know that a more detailed study of the impact of the same variable on different types of school bullying will help to achieve the goal of accurately preventing and controlling bullying in China.

Based on this, our study will use a large-scale random sampling survey data called Regional Education Quality and Health Examination organized by National Innovation Center on Assessment of Basic Education Quality in 2014 to estimate the effect of whether the middle school students are from urban schools, whether they are migrant children, left-behind children, and whether they are from single-parent families and their academic performance, personality quality, interpersonal relationship, prosocial behavior and other variables to suffering from different types of school bullying and the heterogeneity of urban and rural middle school students, and test whether there is a significant difference with the effect of the same variable on different types of school bullying. It should be pointed out that our study uses the large-scale middle school students' survey data to compare the difference in school bullying between urban and rural middle school students. At the same time, it also provides empirical data for the problem of migrant, left-behind, single-parent children's school bullying. In the choice of methods, to overcome the limitations of Ordinary Least Square (OLS), the Seemly Unrelated Regression Model was used to estimate the effects of various influencing factors. Of course, due to the limitations of database design, the definition of migrant and left-behind children is not restricted with academic definitions that may affect the accuracy of results to some extent. In addition, this study has not made a quantitative causal analysis of school bullying. However, we still provided a relatively reliable conclusion for exploring the factors affecting school bullying at the individual level and the precise prevention and control of school bullying.

Methods

Our data come from a project called Regional Education Quality and Health Examination organized by National Innovation Center on Assessment of Basic Education Quality in 2014. The project implemented full surveys in Ximeng, Zhengzhou and Futian, and implemented three-stage PPS tests in Zhejiang, Zhuzhou, Luoyang, Shenzhen, and Shijiazhuang, China. Specifically, in the first phase, the stratified PPS method is used to select counties and districts. In the second phase, the stratified PPS method is used to select schools. The third phase uses random equidistant sampling to select students. In the test, ninth grade students participated in Language, Mathematics, English, Science, and Humanities tests² and filled in relevant questionnaires such as mental health, moral behavior and influencing factors. A total of 178,606 ninth grade students participated in the survey, including 94,525 boys, accounting for 52.92%, with 5.48% higher than girls. The students in the city, county, and rural areas accounted for 67.64%, 24.73%, and 7.63%, respectively. The proportion of students enrolled in rural schools is relatively low, which may be related to the adjustment of the layout of rural middle schools, the gradual decline of the number of rural middle school, and the entry of many rural stu-

dents into urban middle schools in the context of urbanization in China to a certain extent.

Based on existing literature (Fu et al., 2013; Malecki et al., 2015; Huang, 2017; Chen et al., 2017), we mainly examined the influence of academic achievement, family characteristics, personality quality, interpersonal relationship, prosocial behavior and other variables on school bullying. It is proposed that the use the following econometric model to explore the key factors affecting middle school students' bullying:

$$\begin{aligned} \text{BULLY}_i = & \beta_0 + \beta_1 \text{GENDER}_i + \beta_2 \text{SES}_i + \beta_3 \text{LEARN}_i + \beta_4 \text{SINGLE}_i + \beta_5 \text{MIGRANT}_i \\ & + \beta_6 \text{LEFTBEHIND}_i + \beta_7 \text{SELFESTEEM}_i + \beta_8 \text{SELFESTEEM}_i^2 \\ & + \beta_9 \text{PEER}_i + \beta_{10} \text{TEASTU}_i + \beta_{11} \text{PARENTCHILD}_i + \beta_{12} \text{PROSOCIAL}_i \\ & + \varepsilon_i \end{aligned}$$

The dependent variables in the model, BULLY are all kinds of school bullying, including relational bullying, verbal bullying, and physical bullying. The Bullying/Victim Questionnaire compiled by Olweus is recognized as a good measurement tool. Chinese scholar Wenxin Zhang translated and revised Olweus's questionnaire. The project, Regional Education Quality and Health Examination, adapted Wenxin Zhang's revised Bullying Questionnaire to measure the frequency of students suffering from verbal bullying, relational bullying and physical bullying at school. Relational bullying includes two items: "rejected by people" and "being swearing in the back". Verbal bullying includes two items: "being teased" and "being threatened". Physical bullying includes three items: "being deliberately attacked, kicked, pushed, or bumped", "own things are intentionally damaged", and "being robbed or extorted property". Compared with the related items in PISA, the project of Regional Education Quality and Health Examination added the item "being robbed or extorted property" to the measurement of school bullying. After internal consistency analysis and confirmatory factor analysis, we found that the reliability and validity index of the school bullying scale is good, which meets the quality requirements of the measurement tool for the scale.

The description of the independent variables in the model is shown in **Table 1**. Among them, the variables, SELFESTEEM, PEER, TEASTU, PARENTCHILD, PROSOCIAL all involve corresponding scales:

Self-esteem refers to a positive or negative attitude of an individual as an independent person. This attitude is an overall emotional evaluation of one's own value, strengths and importance. It is an important component of self-experience. Regarding the measurement of self-esteem, the early self-esteem scale compiled by Rosenberg was widely used. Yifu Yu and Xin Yu (1993) translated and revised this scale into Chinese version in 1993. The project of Regional Education Quality and Health Examination further revised the Chinese version of the self-esteem scale. The final scale includes "I feel that I am a valuable person, at least on the same level as others", "I feel that I have many good qualities", "In the final analysis, I tend to feel that I am a loser", "I can do things well like most people." "I don't think I have a lot of pride." "I have a positive attitude toward myself." "Overall, I am satisfied with myself." "I hope I can win more

Table 1. The Descriptions of Variables.

Type	Variable	Descriptions
Dependent Variables	RELBULLY	Mean of the two items of “rejected by people” and “being swearing in the back”, ranging from 1-5.
	PHYBULLY	Mean of the two items of “being deliberately attacked, kicked, pushed, bumped” and “own things are intentionally damaged”, ranging from 1-5.
	VERBULLY	Mean of the two items of “being teased” and “being threatened”, ranging from 1-5.
Core Independent Variables	LEARN	Continuous variable. Mean of the standardized language, mathematics, English, science and humanities grades.
	SINGLE	Categorical variables, 1 means coming from single-parent family; 0 means not coming from single-parent family.
	MIGRANT	According to the item “Do you move from rural to other places with your parents or other relatives?”, if the answer is “moving from rural to this city/county” or “moving from other cities/counties to this city/county”, it will be defined as “migrant children”. Categorical variables, 1 means migrant children; 0 means not migrant children.
	LEFTBEHIND	According to the item “Are your parents not working locally for a long time?” and the item of the school’s location, non-urban (rural, county) children at least one of whose parents do not work locally are defined as left-behind children. Categorical variables, 1 means left-behind children; 0 means not left-behind children.
	UR	According to the item of the school’s location, 1 means urban; 0 means non-urban (including rural and county).
	SELFESTEEM ³	Continuous variable. All items in the scale are synthesized and standardized with loads as weights.
	PARENTCHILD ³	Continuous variable. All items in the scale are synthesized and standardized with loads as weights.
	PEER ³	Continuous variable. All items in the scale are synthesized and standardized with loads as weights.
	TEASTU ³	Continuous variable. All items in the scale are synthesized and standardized with loads as weights.
	PROSOCIAL ³	Continuous variable. All items in the scale are synthesized and standardized with loads as weights.
Control Variables	GENDER	Categorical variables. 1 means male; 0 means female.
	SES	Continuous variable. Mean of the standardized maximum parental education level, highest parental status and family ownership.

respect for myself”, “I often feel that I am useless”, “I always think that I have nothing” these 10 items, using “completely inconsistent, inconsistent, more consistent, and fully consistent” four-level scoring.

Parent-child relationship refers to the interaction between parents and children. The China Children and Adolescents Psychological Development Survey Project Team has revised and adapted the Network of Relationships Inventory (NRI) scale compiled by Furman & Buhrmester in 1992 to form a parent-child relationship scale with 8 dimensions and 23 items and the reliability and validity of the scale is good. Considering

the length of the questionnaire and the limited time, the project of Regional Education Quality and Health Examination delete some items on the scale, and finally select the items with higher loads in each dimension to form a scale of 11 items, “Do you feel satisfied with your relationship with your parents?”, “Are you happy with your parents?”, “Will you share your secrets and personal feelings with your parents?” “Do you have any disagreements or quarrels with your parents?”, “Do you and your parents argue or blame each other?”, “Would you be upset when you are together with your parents?” “Do parents help you solve problems when you have problems?”, “Do parents like or praise what you do?”, “Do you and your parents get bored with each other?”, “Do your parents love you?”, “Do you have some fun together with your parents?”, using “never, occasionally, sometimes, and often” four-level scoring.

Peer relationship mainly refers to a kind of interpersonal relationship established and developed in the process of communication between individuals of the same age or the similar level of psychological development (Zou et al., 1999). The project of Regional Education Quality and Health Examination revised the Chinese version of Children’s Loneliness Scale (CLS), reflecting the peer relationship with children’s loneliness. The final scale includes 10 items in total, “I am very happy when I am with my classmates”, “My classmates often bully me”, “I am very satisfied with my relationships with my classmates”, “I often have disputes with my classmates”, “When I need it, I can find friends”, “I have many good friends”, “Classmates like me very much”, “I feel lonely in my class”, “I can hardly let other children like me”, “I feel that no one cares about me in some activities”, using “completely inconsistent, inconsistent, more consistent, and fully consistent” four-level scoring.

The teacher-student relationship mainly refers to the relationship between teachers and students in the school. It is the psychological relationship between teachers and students with emotion, cognition and behavioral communication as the main form of expression. Considering the length of the questionnaire and the limited time, the project of Regional Education Quality and Health Examination revised the teacher-student relationship scale compiled by Zhiyong Qu. The final scale includes 15 items, “The teacher treats me fairly”, “The teacher is very concerned about me”, “The teacher and I are good friends”, “The teacher cares about every student”, “The teacher allows us to have different opinions”, “The teacher listens to my opinions patiently.”, “The teacher does not ridicule me, does not dig at me.”, “When I make a mistake, the teacher will ask for the reason”, “The teacher does not ask me to accept his or her opinion”, “I admire my teacher very much”, “The teacher encourages me and praises me.” “I am willing to tell my teacher about what in my heart.” “When I encounter difficulties other than learning, I will think of asking for help from my teacher.” “I am willing to show my strengths in front of the teacher.” “The teacher trusts me very much”, using “completely inconsistent, inconsistent, more consistent, and fully consistent” four-level scoring.

Prosocial behavior refers to behaviors that bring certain benefits to others. These behaviors can make the relationship between the two parties more harmonious (Kou et al., 2007). Yasong Du, a member of Shanghai Mental Health Center revised Chinese

version of the Strengths and Difficulties Questionnaire (SDQ) compiled by American psychologist Goodman R. in 1997. Based on this, the project of Regional Education Quality and Health Examination formed a scale of 1 dimension with 5 items, “I try to be friendly to others”, “I often share things with others (such as food, games, pens, etc.)”, “If someone is hurt, sad or uncomfortable, I am willing to help him or her”, “I will be friendly to people who are younger than me.” Small children”, “I often volunteer to help others”, which use “inconsistent, somewhat inconsistent and fully consistent” as the three-level scoring.

The scales of school bullying, self-esteem, parent-child relationship, peer relationship, teacher-student relationship, prosocial behavior involved in this study have good reliability and validity. The specific indicators are presented in **Table 2**.

Results

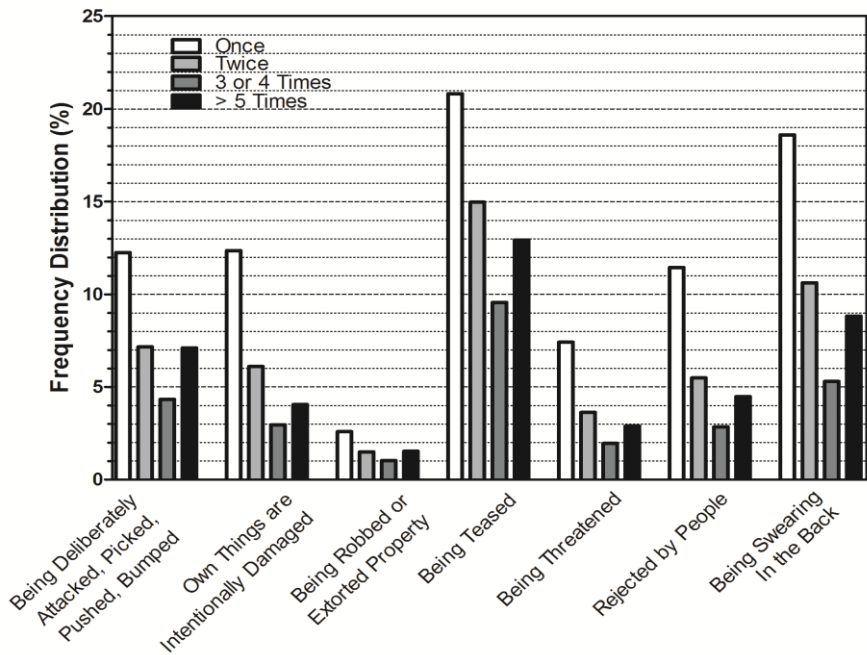
Basic Situation of School Bullying among Middle School Students

As can be seen from **Figure 1**, among all forms of bullying, the frequency of “being robbed or extorted property” occurs at the lowest (6.64%). And for comparing with PISA results, this item was removed from the analysis below. “Being teased” occurs most frequently (58.28%), which is different from Chen et al.’s research results using PISA data. They found the lowest incidence of school bullying in these four provinces and cities in China was the form of threat of verbal bullying, and the most frequent occurrence is the deliberate destruction of private property (Chen et al., 2017). However, our results are basically consistent with the results of the China school Bullying Survey Report issued by the school Safety Professional Committee of the China Emergency Management Association. It said that the incidence of verbal bullying is significantly higher than other bullying behaviors. At least 38.55%, 58.28%, and 43.34% of middle

Table 2. The Results of Reliability and Validity of Scales.

Scale	# of Items	Crobach's α	χ^2	df	χ^2/df	CFI	TLI	RMSEA	N
School Bullying	6	0.841	2,325.89	5	1,664.02	0.994	0.982	0.052	170,555
Self-Esteem	10	0.837	50,419.47	31	1,626.43	0.912	0.872	0.098	170,787
Parent-Child Relationship	11	0.832	57,837.8	38	1,522.05	0.921	0.885	0.094	170,466
Peer Relationship	10	0.842	37,767.3	30	1,258.91	0.933	0.900	0.086	170,779
Teacher-Student Relationship	15	0.940	96,787.97	88	1,099.86	0.938	0.925	0.080	170,758
Prosocial Behavior	5	0.805	1,982.83	5	396.57	0.992	0.984	0.048	170,638

Figure 1. The Proportion of Middle School Students Suffering from Various Forms of School Bullying.



school students have suffered physical bullying, verbal bullying and relational bullying, respectively (Zhang, 2017). This result was slightly higher than the results of other studies, such as Zhou et al. (2017) found that 40.7% of elementary and middle school students in Beijing had experience of being called nicknames, and 18.6% of students had experience of being isolated by classmates with a data of 12 high schools, middle schools and elementary schools in Beijing. According to a survey conducted by the China Youth Research Center of 5,864 elementary and middle school students in 10 provinces and cities in China, 32.5% of students have suffered from school bullying (Liu et al., 2015).

By calculating the average frequency of all kinds of school bullying, we found that middle school students have the highest frequency of verbal bullying ($\bar{X} = 1.81, \sigma = 0.96$). The average frequency of suffering from relational bullying is in the second rank ($\bar{X} = 1.70, \sigma = 1.04$). They have the lowest average frequency of physical bullying ($\bar{X} = 1.59, \sigma = 0.98$). The highest average frequency of verbal bullying is consistent with the results of Liu et al. (2017). It may be due to the verbal bullying is not easy to be discovered by teachers and parents. Once a student uses insulting vocabulary to swear or ridicule classmates, if the student bullied chooses to be silent, it will encourage the bullying behavior; if the student bullied responds to it, it may cause more slick words to bully.

Factors Affecting School Bullying of Middle School Students

In order to explore which students were more likely to be bullied, we uses Seemingly Unrelated Regression to explore how individual academic performance, interpersonal relationships, prosocial behavior, self-esteem, migrant or left-behind status, and single-parent families influence different types of school bullying in the context of controlling gender and family socioeconomic status. Considering the influence of variables such as academic performance, interpersonal relationship, social behavior, and self-esteem on the relational bullying, physical bullying and verbal bullying, there may be some connection between the equations, such as the correlation between the disturbances. In order to improve the estimation efficiency and test whether the variables have different effects on the types of bullying, we adopted Seemingly Unrelated Regression Estimation. In addition, considering the correlation between the variables like self-esteem, prosocial behavior and peer relationship, two models are also used in the Seemingly Unrelated Regression Estimation: Model 1 does not include self-esteem and prosocial behavior variables, and model 2 does not include peer relationship variable. The residual correlation matrix coefficients of the three types of school bullying equations in Model 1 are between 0.508 and 661, and the BP test results reject the null hypothesis (H_0 : the residuals of the equations are independent of each other, $P = 0.000$). The residual correlation matrix coefficients of the three types of school bullying equations in Model 2 are between 0.552 and 688, and the BP test results reject the null hypothesis (H_0 : the residuals of the equations are independent of each other, $P = 0.000$). So it is more appropriate to use Seemingly Unrelated Regression Estimation in both Model 1 and Model 2.

In terms of interpersonal relationship, all three relationships including parent-child, peer-peer and teacher-student could significantly affect the frequency of suffering from school bullying (see **Table 3**). This conclusion is in line with the theoretical assumptions of the theory and supports the hypotheses 1-3 of this study. Through Seemingly Unrelated Regression Estimation, we found that the influence of peer relationship and teacher-student relationship on the suffering from different types of school bullying is different, but there was no significant difference between the influences of parent-child relationship on both physical and verbal bullying. In the micro-social structure of the campus field, middle school students only form a small group due to similar behavioral characteristics or spatial proximity. Some students suffering from school bullying may be difficult to be recognized and accepted by other students, and are isolated or marginalized in school and class activities. Therefore, a good peer relationship can reduce the frequency of various types of school bullying, and the impact of the relational bullying is the largest, followed by verbal bullying. We supposed that the most common occurrence of school bullying is relationship bullying. That is, bullies will first isolate and exclude bullied students, and then cause verbal bullying. In more serious cases, physical bullying will occur. Therefore, the absolute value of the effect of peer relationship has the greatest impact on relational bullying in the three types of bullying, and the effect on physical bullying is the minimal. The absolute value of the effect of teacher-student relationship also has a similar order, that is, the effect of the relational bullying

is relatively the largest, and the effect of physical bullying is the minimal. In a good parent-child relationship, parents' full emotional support for their children will make children feel being cared for, gain a sense of security, and have the courage and healthy personality to face problems, thus avoiding suffering from relational bullying, verbal bullying and physical bullying from classmates. As for why parent-child relationship has no significant difference in the effect of physical bullying and verbal bullying, it is likely that the frequency of verbal bullying and physical bullying is relatively low in families with good parent-child relationships, so the effect value is similar. Therefore, according to the standardized parent-child relationship score, we define the score greater than 0 as a good parent-child relationship. We found that the average frequency of verbal bullying with good parent-child relationship ($\bar{X} = 1.67$, $\sigma = 0.88$) is significantly lower than the overall average at 0.001 level ($\bar{X} = 1.81$, $\sigma = 0.96$). The average frequency of physical bullying with good parent-child relationship ($\bar{X} = 1.45$, $\sigma = 0.87$) is also significantly lower than the overall average at 0.001 level ($\bar{X} = 1.59$, $\sigma = 0.98$). It can be seen that the average frequency of verbal bullying and physical bullying with good parent-child relationship is relatively low, which confirms our conjecture to some extent. The prosocial behavioral does not have a significant impact on various types of bullying ($P > 0.1$), which rejects the hypothesis 4. We supposed that the possible reason is that the influence of prosocial behavior on school bullying is indirect. The prosocial behavior may affect the level of interpersonal relationship, which may affect the probability of suffering from school bullying. Some studies have found that prosocial behavior may influence peer acceptance (Ferguson et al., 2012).

The academic performance has almost no impact on various types of school bullying ($\beta = 0.000$, $P < 0.01$). But the impact of gender on three types of school bullying is significantly different. Although boys are more likely to be bullied than girls, whether it is relational bullying, physical bullying or verbal bullying, the difference is more significant in both physical and verbal bullying. This is basically consistent with the existing data (Barboza et al., 2009; Huang, 2017; Zhou et al., 2017). We supposed that due to historical and cultural factors, violence may be appreciated and even worshiped in the male group, such as the ancient Colosseum in the Western society and the Liangshan heroes in China. The male group is more likely to incite and conflict than the female group. Therefore, the male student is more likely to be the victim of physical bullying, and the combination of multiple bullying behaviors during the bullying process may also cause the male to be a victim of verbal and relational bullying.

The single-parent family status has a significant impact on relational bullying but different in the physical and verbal bullying, of which showed no significance. On the whole, students from single-parent families are more likely to suffer from various types of school bullying. The possible reason is that the middle school students coming from single-parent families are prone to be lonely because of their emotional indifference with one of their parents. They are easily mistaken by their classmates and then suffer from relational bullying. In addition, students from non-single-parent families may be immature on cognitive and emotional development and have low empathy level on others. The peers who are growing in single-parent families are understood as differ-

ent types of groups, which lead to rejection, ridicule, even insults or other bullying behaviors (Chan et al., 2015).

Compared with other types of school bullying, migrant children are more vulnerable to verbal bullying. But left-behind children have almost the same impact on suffering from different types of school bullying. Migrant and left-behind children are more vulnerable to various types of bullying, which is basically consistent with the conclusion of Zhou et al. (2017). They found that migrant students were more likely to be bullied than local students in Beijing. Left-behind and migrant children may be excluded to the edge of society due to unfair social and educational system design (Zhou et al., 2017). Wang (2016) found through qualitative research that left-behind children suffering from school bullying may be relevant to reduced sense of security caused by lack of parental care, a sense of peer attachment and manifestation of autonomy.

Self-esteem has significant differences in the impact of various types of bullying, and has a greater impact on relational bullying. Studies have found that adolescents with low levels of self-esteem are more likely to suffer from school bullying (Malecki et al., 2015; Gu et al., 2003). We found that the level of self-esteem of middle school students and the frequency of suffering from various types of school bullying showed a U-shaped relationship. The low level of self-esteem may reduce individual's self-evaluation and self-worth, and make middle school students unable to defend their legitimate rights and even their personal dignity when faced with possible bullying behaviors. Instead, they will simply confess and eventually lead to their continuous suffering from bullying. But if the middle school students' self-esteem or self-evaluation is too high, they may lead to dissatisfaction or over-sensitivity to other people's evaluation when in interacting with others, thus suffering from more school bullying, especially relational bullying. Therefore, it is necessary for middle school students to maintain a moderate level of self-esteem to avoid school bullying.

To examine the robustness of Seemingly Unrelated Regression Estimation as showed in **Table 3**, we changed the functional form to perform an unrelated biprobit regression. The results are shown in **Schedule 1**. Most of the model coefficient results are consistent with the regression results appeared in **Table 3**, except that girls are more likely to suffer from relational bullying than boys. This result is consistent with the results of Jing et al. (2009). It can be seen that the coefficient estimation of each model in **Table 3** are relatively stable.

Heterogeneity Analysis of School Bullying among Urban and Rural Middle School Students

From the simple description of the statistics, compared with rural middle school students ($\bar{X} = 1.81, \sigma = 0.98$), urban students ($\bar{X} = 1.78, \sigma = 1.02$) suffered significantly lower frequency of verbal bullying. However, urban students ($\bar{X} = 1.71, \sigma = 1.10$) were more significantly likely to suffer from relational bullying ($t = -4.146, P < 0.01$) than rural students ($\bar{X} = 1.68, \sigma = 1.02$). There was no significant difference in the frequency of physical bullying among urban and rural students ($t = -1.139, P > 0.1$). In order to explore the difference in the impact on school bullying among urban and rural students,

Table 3. The Results of Seemingly Unrelated Regression Estimation of Middle School Students' School Bullying Influence Factors.

	RB		PB		VB		RB v.s. PB		RB v.s. VB		PB v.s. VB	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
GENDER	0.039± 0.006‡	0.079± 0.006‡	0.325± 0.005‡	0.35± 0.006‡	0.292± 0.005‡	0.323± 0.006‡	2807.9‡	2313.5‡	2258.4‡	1948.2‡	57.5‡	36.1‡
SES	0.05± 0.004‡	0.034± 0.004‡	0.04± 0.004‡	0.03± 0.004‡	0.011± 0.003‡	0.001± 0.004	9.03‡	1.54	127.24‡	85.64‡	102.32‡	97.74‡
LEARN	0.0‡	0.0‡	0.0‡	0.0‡	0.0‡	0.0‡	256.8‡	303.4‡	74.0‡	83.3‡	88.0‡	112.3‡
PARENT CHILD	-0.083± 0.003‡	-0.154± 0.003‡	-0.064± 0.003‡	-0.113± 0.003‡	-0.062± 0.003‡	-0.114± 0.003‡	36.3‡	165.0‡	48.4‡	169.2‡	0.9	0.04
PEER	-0.415± 0.003‡		-0.279± 0.003‡		-0.311± 0.003‡		2054.8‡		1246.7‡		169.8‡	
TEASTU	-0.027± 0.003‡	-0.110± 0.004‡	-0.027± 0.003‡	-0.085± 0.003‡	-0.034± 0.003‡	-0.096± 0.003‡	0.05	60.7‡	6.0‡	21.1‡	9.9‡	16.6‡
SELFESTEEM		-0.168± 0.005‡		-0.103± 0.004‡		-0.134± 0.004‡		233.4‡		66.8‡		81.7‡
SELFESTEEM ²		0.009± 0.0‡		0.006± 0.0‡		0.008± 0.0‡		113.1‡		30.4‡		44.9‡
PROSOCIAL		-0.005± 0.003		-0.003± 0.003		-0.001± 0.003		0.6		2.4		0.8
SINGLE	0.058± 0.012‡	0.078± 0.013‡	0.029± 0.012‡	0.048± 0.012‡	0.016± 0.011	0.035± 0.012‡	5.7‡	6.0‡	13.4‡	12.9‡	2.1	1.6
MIGRANT	0.009± 0.006	0.034± 0.006‡	0.022± 0.006‡	0.04± 0.006‡	0.033± 0.006‡	0.051± 0.006‡	4.2‡	1.1	17.6‡	9.2‡	5.4‡	5.1‡
LEFTBEHIND	0.027± 0.016*	0.032± 0.018*	0.051± 0.016‡	0.05± 0.017‡	0.058± 0.015‡	0.057± 0.017‡	2.7	1.8	3.9‡	2.6	0.3	0.3
Constant	1.824± 0.022‡	1.714± 0.025‡	1.894± 0.021‡	1.843± 0.023‡	1.971± 0.021‡	1.885± 0.023‡						
R ²	0.211	0.093	0.160	0.101	0.181	0.106						
RMSE	0.903	0.973	0.880	0.912	0.854	0.894						
Ch ²	29218.2‡	10627.4‡	20906.0‡	11674.7‡	24120.5‡	12291.8‡						

RB: Relational Bullying; PB: Physical Bullying; VB: Verbal Bullying

On the left side of the table is the influence coefficient of variables on different types of school bullying and the robust standard error is in parentheses. The right side of the table shows the chi-square statistic of whether the coefficients of the same variable are equal on the two equations when the dependent variable is any two different types of school bullying. *P<0.1, †P<0.05, ‡P<0.01. Data were Mean ± SEM.

we add urban and rural variable UR and their interaction variables with intervening variables like peer relationship, parent-child relationship, teacher-student relationship, prosocial behavior based on the original model. Meanwhile, considering the correlation between UR and variables like the migrant or left-behind children, we no longer include the variables like migrant or left-behind children in the model. Similarly, considering the high correlation between self-esteem, prosocial behavior and peer relationships, two models are also used in the process of Seemingly Unrelated Regression Estimation. Model 1 does not include variables like self-esteem, prosocial behavior and the interaction term between UR and prosocial behavior. Model 2 does not include the peer relationship and its interaction with UR. The residual correlation matrix coefficients of the three types of school bullying in Model 1 are between 0.540 and 703, and the BP test results reject the null hypothesis (H0: the residuals of the equations are independent of each other, P = 0.000). The residual correlation matrix coefficients of the three types of school bullying equations in Model 2 are between 0.584 and 728, and the

Schedule 1. The Unrelated Biprobit Regression Results of Whether Middle School Students Suffering from School Bullying.												
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	RB	PB	RB	PB	RB	VB	RB	VB	PB	VB	PB	VB
GENDER	-0.12± 0.008‡	0.412± 0.008‡	-0.086± 0.008‡	0.42± 0.008‡	-0.122± 0.008‡	0.299± 0.008‡	-0.087± 0.008‡	0.314± 0.008‡	0.409± 0.008‡	0.302± 0.008‡	0.417± 0.008‡	0.317± 0.008‡
SES	0.01± 0.005‡	0.015± 0.005‡	-0.003± 0.005	0.006± 0.005	0.011± 0.005‡	-0.059± 0.005‡	-0.003± 0.005	-0.067± 0.005‡	0.013± 0.005‡	-0.058± 0.005‡	0.003± 0.005	-0.066± 0.005‡
LEARN	0.0	0.0‡	0.0*	0.0‡	0.0	0.0‡	0.0*	0.0‡	0.0‡	0.0‡	0.0‡	0.0‡
PARENTCHILD	-0.111± 0.005‡	-0.089± 0.005‡	-0.165± 0.005‡	-0.137± 0.005‡	-0.112± 0.005‡	-0.067± 0.005‡	-0.165± 0.005‡	-0.109± 0.005‡	-0.09± 0.005‡	-0.067± 0.005‡	-0.137± 0.005‡	-0.110± 0.005‡
PEER	-0.407± 0.005‡	-0.329± 0.005‡			-0.407± 0.005‡	-0.345± 0.005‡			-0.33± 0.005‡	-0.345± 0.005‡		
TEASTU	-0.098± 0.005‡	-0.078± 0.005‡	-0.159± 0.005‡	-0.128± 0.005‡	-0.100± 0.005‡	-0.087± 0.005‡	-0.16± 0.005‡	-0.135± 0.005‡	-0.080± 0.005‡	-0.086± 0.005‡	-0.130± 0.005‡	-0.135± 0.005‡
SELFESTEEM			-0.152± 0.006‡	-0.114± 0.006‡			-0.153± 0.006‡	-0.156± 0.006‡			-0.115± 0.006‡	-0.155± 0.006‡
SELFESTEEM ²			0.009± 0.0‡	0.007± 0.0‡			0.009± 0.0‡	0.009± 0.0‡			0.007± 0.0‡	0.009± 0.0‡
PROSOCIAL			-0.049± 0.005‡	-0.047± 0.005‡			-0.05± 0.005‡	-0.047± 0.005‡			-0.048± 0.005‡	-0.047± 0.005‡
SINGLE	0.043± 0.017‡	0.039± 0.017‡	0.05± 0.017‡	0.053± 0.018‡	0.044± 0.017‡	0.006± 0.017‡	0.05± 0.017‡	0.026± 0.018	0.040± 0.017‡	0.004± 0.017	0.054± 0.018‡	0.026± 0.018
MIGRANT	0.006± 0.008	0.022± 0.008‡	0.031± 0.008‡	0.043± 0.009‡	0.007± 0.008	0.033± 0.008‡	0.031± 0.008‡	0.05± 0.009‡	0.021± 0.008‡	0.034± 0.008‡	0.041± 0.009‡	0.051± 0.009‡
LEFTBEHIND	0.099± 0.023‡	0.07± 0.023‡	0.099± 0.024‡	0.054± 0.024‡	0.099± 0.023‡	0.06± 0.024‡	0.099± 0.024‡	0.046± 0.024*	0.072± 0.023‡	0.06± 0.032‡	0.054± 0.024‡	0.047± 0.024*
Constant	-0.013± 0.032	0.059± 0.032*	-0.113± 0.032‡	-0.002± 0.033	-0.017± 0.032	0.334± 0.032‡	-0.117± 0.032‡	0.2± 0.033‡	0.062± 0.032*	0.349± 0.032‡	-0.001± 0.033	0.209± 0.033‡
Sample Size	111,065		104,853		111,065		104,853		111,065		104,853	
Wald χ^2	21891.11‡		13234.82‡		19626.48‡		11109.46‡		17169.09‡		10734.55‡	
<i>RB: Relational Bullying; PB: Physical Bullying; VB: Verbal Bullying</i> <i>*P<0.1, †P<0.05, ‡P<0.01. Data were Mean ± SEM.</i>												

BP test results reject the null hypothesis (H0: the residuals of the equations are independent of each other, $P = 0.000$). So it is more appropriate to use Seemingly Unrelated Regression Estimation in both model 1 and model 2.

Table 4 shows the influence of GENDER, SES, LEARN, SELFESTEEM, PEER, TEASTU, PARENTCHILD on suffering from different types of school bullying among middle school students, which is basically the same as in the **Table 3**. However, the PROSOCIAL has a significant negative impact on suffering from verbal bullying with the significance level of 0.1 ($\beta = -0.014$, $P < 0.1$). That is, the higher the level of prosocial behavior of middle school students, the lower the probability of suffering from verbal bullying that supporting the hypothesis 4 to some extent. In addition, significant difference was observed in the impact of single-parent status on the types of school bullying. Middle school students from single-parent families are more likely to suffer from various types of school bullying.

We paid particular attention to the impact of the variable UR and its interaction with other variables on various types of school bullying among middle school students and whether such influences are significant are presented in **Table 4**. The results showed that the variable UR only had predictive effects on the verbal bullying at the

Table 4. Heterogeneity Analysis Results of School Bullying Influence Factors among Urban and Rural Middle School Students.

	RB		PB		VB		RB v.s. PB		RB v.s. VB		PB v.s. VB	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
GENDER	0.062± 0.008‡	0.097± 0.009‡	0.355± 0.008‡	0.380± 0.008‡	0.309± 0.008‡	0.337± 0.008‡	1479.5‡	1288.7‡	1112.5‡	991.0‡	59.2‡	48.0‡
SES	0.044± 0.005‡	0.028± 0.006‡	0.04± 0.005‡	0.03± 0.006‡	0.018± 0.005‡	0.007± 0.005	0.47	0.06	26.8‡	17.1‡	30.6‡	29.7‡
LEARN	-0.0± 0.0‡	-0.0± 0.0‡	-0.0± 0.0‡	-0.0± 0.0‡	-0.0± 0.0‡	-0.0± 0.0‡	83.0‡	91.9‡	34.3‡	33.0‡	18.9‡	26.6‡
PARENTCHILD	-0.086± 0.008‡	-0.161± 0.009‡	-0.063± 0.008‡	-0.122± 0.008‡	-0.053± 0.008‡	-0.115± 0.008‡	8.8‡	23.9‡	18.9‡	36.1‡	2.6	1.4
PEER	-0.405± 0.008‡		-0.291± 0.008‡		-0.322± 0.008‡		220.7‡		124.9‡		25.8‡	
TEASTU	-0.006± 0.008	-0.091± 0.009‡	-0.012± 0.003	-0.074± 0.009‡	-0.022± 0.008‡	-0.085± 0.008‡	0.7	4.5‡	4.5‡	0.6	2.5	3.2*
SELFESTEEM		-0.161± 0.006‡		-0.100± 0.006‡		-0.125± 0.006‡		111.9‡		42.3‡		30.2‡
SELFESTEEM ²		0.009± 0.001‡		0.006± 0.001‡		0.008± 0.000‡		49.0‡		13.6‡		19.4‡
PROSOCIAL		-0.013± 0.008		-0.010± 0.008		-0.014± 0.008*		0.14		0.03		0.45
SINGLE	0.077± 0.017‡	0.099± 0.019‡	0.051± 0.017‡	0.075± 0.018‡	0.053± 0.016‡	0.076± 0.017‡	2.43	2.06	2.20	2.13	0.02	0.00
UR	0.004± 0.009	0.006± 0.010	-0.013± 0.009	-0.014± 0.009	-0.053± 0.008‡	-0.051± 0.009‡	4.3‡	5.2‡	49.8‡	46.8‡	37.0‡	31.2‡
UR×PARENT CHILD	0.012± 0.010	0.005± 0.010	-0.001± 0.010	-0.002± 0.010	-0.007± 0.009	-0.007± 0.010	1.99	0.58	4.49‡	1.69	0.68	0.41
UR×PEER	-0.026± 0.010‡		-0.009± 0.010		-0.001± 0.009		3.06*		7.47‡		1.34	
UR×TEASTU	-0.011± .010	-0.007± 0.011	0.003± 0.010	0.008± 0.010	0.002± 0.009	0.010± 0.010	2.42	2.55	2.36	3.37*	0.01	0.06
UR×PROSOCIAL		0.018± 0.010*		0.013± 0.010		0.014± 0.009		0.33		0.16		0.06
Constant	1.989± 0.032‡	1.939± 0.036‡	2.029± 0.032‡	2.016± 0.034‡	2.151± 0.031‡	2.109± 0.033‡						
R ²	0.214	0.092	0.169	0.104	0.186	0.106						
RMSE	0.923	0.994	0.914	0.951	0.879	0.922						
Ch ²	14941.11‡	5377.88‡	11166.85‡	6152.90‡	12555.25‡	6300.59‡						

RB: Relational Bullying; PB: Physical Bullying; VB: Verbal Bullying

On the left side of the table is the influence coefficient of variables on different types of school bullying and the robust standard error is in parentheses. The right side of the table shows the chi-square statistic of whether the coefficients of the same variable are equal on the two equations when the dependent variable is any two different types of school bullying. *P<0.1, †P<0.05, ‡P<0.01. Data were Mean ± SEM.

significance level of 0.01 ($\beta = -0.05, P < 0.01$), which had no significant effect on the physical and relational bullying. In other words, rural students are more likely to suffer from verbal bullying than urban students. This may be related to the small size of rural schools and the influence of rural culture. Rural students are more familiar with each other and between families. They are also more likely to be exposed to impolite language in rural cultures. It is easy to make fun of classmates and teasing classmates. In addition, the interaction between UR and peer relationship ($\beta = -0.026, P < 0.05$) can significantly affect the frequency of relational bullying, but it has no significant effect on physical and verbal bullying. To a certain extent, compared with rural middle school students, peer influence has a greater impact on relational bullying among urban students. Therefore, we should pay attention to the phenomenon of verbal bullying among

rural students, and also pay attention to guiding urban students to build a harmonious peer relationship.

Conclusions and Suggestions

The governance path of school bullying needs to be dealt with by the after-thought crisis to early intervention and prevention. Based on the previous analysis, the main conclusions and recommendations of this study are as follows:

First, Chinese middle school students have suffering from the highest frequency of verbal bullying, followed by relational and physical bullying. Compared with the visible physical bullying, teachers and parents may hardly hear verbal bullying and hardly feel relational bullying among students. And both are more difficult to be perceived and monitored by educators and parents, but they can produce long-term harm to students' bodies and minds. Therefore, on the one hand, schools can monitor through the installation of "electronic eyes" in the public domain of the campus. On the other hand, teachers should pay attention to the daily communication with students and learn from the information reflected by the students whether anyone in the class suffering from relational or verbal bullying, so that the facts can be confirmed early and can take necessary preventive measures. For example, psychological and behavioral interventions can be carried out in students who have already committed bullying, and bullying behaviors should be interrupted in time to avoid more harm to the students that will influence their future personality, psychological and prosocial behavior. At the same time, it is necessary to protect the bullied and give necessary psychological counseling to prevent the bullied from psychological shadow.

Second, boys are more likely to suffer from school bullying than girls, and the difference between boys and girls in school bullying are more manifested in physical and verbal bullying. As boys are more prone to incitement and conflict, parents and teachers should pay more attention to the daily performance and behaviors. For parents of boys, they should pay more attention to the abnormal behaviors, such as homelessness, sleepy nightmares and reluctance to attend class reunions etc. If boys have such behaviors, parents should communicate with them in time to see if they are being bullied at school. Teachers should strengthen the education of rule awareness for students, especially boys. We can learn from the Olweus Bullying Prevention Program (OBPP) (Lazarus et al., 2012) to clearly define bullying behavior and clearly indicate to them which behaviors are not allowed. Meanwhile, teachers should try to cultivate students to form a harmonious peer relationship, and prevent small contradictions or flights among students especially the boys from developing into school bullying.

Third, students from rural area, from single-parent families, or with migrant or left-behind status are more vulnerable to suffering from different types of bullying. Especially those coming from single-parent families are more likely to suffer from relational bullying. Rural and migrant children are more vulnerable to verbal bullying. But left-behind students have almost suffered the same from different types of school bullying. Therefore, for middle school students coming from these four high-risk families,

schools should establish care archives as soon as possible. Teachers should focus on them to ensure their safety during school time. In addition, schools and families should strengthen anti-school bullying cooperation, popularize both bullying and anti-bullying knowledge through parent meetings, hand out anti-school bullying manuals to parents and strengthen communication between parents and teachers, particularly the head teachers need to keep in touch with parents of above-mentioned risk families and encourage them to keep intimate contact with their children through telephone and internet etc., and to give their children more care and help them improve their social skills, and to restore and rebuild self-esteem, confidence and trust.

Fourth, the relationship between the level of self-esteem and the frequency of different types of school bullying is U-shaped, and this effect is more significant in relational bullying. Therefore, in order to establish a good relationship between middle school students and their peers, and avoid suffering from relational bullying, it is necessary to maintain a moderate level of self-esteem. Students with low level of self-esteem are too negative or even inferior to their own estimation. Schools and teachers should encourage them to actively participate in group activities, participate in interpersonal relationship and show themselves boldly through group or individual counseling. Parents should also evaluate children correctly, trust them fully and encourage them to express themselves in the crowd to help them to build up confidence. For those whose self-esteem level is too high or even conceited, schools should pay attention to fostering their sense of cooperation and help such students treat other students with modesty and sincerity. Learning to accept and respect others should be encouraged to be the acceptable and recognizable deeds.

Fifth, the parent-child, peer-peer and teacher-student relationships will significantly affect the frequency of suffering from school bullying among middle school students, and the peer relationship has a greater impact on urban students suffering from relational bullying. Therefore, it is necessary to give more care and help to students who are relatively “weak” in social communication. Parents should enhance communication with their children, promptly ask their children about the interpersonal relationship at school and listen to the information disclosed by children during the complaining process. And they should communicate with school teachers in time, understand if the children are bullied at school and find bullying behaviors as early as possible to stop them. In addition, parents can guide their children to learn how to protect themselves and take appropriate self-defense measures, such as teaching children to resist and defend their dignity and rights. At the same time, teachers should give each student support and care fairly and can also guide students, especially those from urban area, to establish a peer support system to fight against school bullying and form an anti-bullying class atmosphere. For instance, drawing from the Finnish school anti-bullying program, through anti-bullying courses and empathy training with the theme of interpersonal relationship and group pressure, we can strengthen students’ anti-bullying attitude, increase their sympathy for vulnerable groups and take advantage of the role of bystanders⁴ to reduce incidence of school bullying.

Notes

1. *Relational bullying is mainly caused by people who bully others manipulates the interpersonal relationship to make the victim be isolated and feel not recognized by the group or feel excluded. Verbal bullying means that people bully others by verbal intimidation, scolding, humiliation, ridiculing or degrading, which produce psychological harm to the bullied. Although the wound is not visible to the naked eye, sometimes the psychological damage caused by it is more serious than physical injuries. In addition, verbal bullying behavior is usually accompanied by relational bullying, and both initiate physical bullying. Physical bullying refers to physical violence, looting or being stolen, or forced to do things that you do not want to do. It is the most easily identifiable form in the clinic and is one of the forms that educators concern the most.*
2. *All the testing tools of the project called Regional Assessment of Education Quality (RAEQ) were compiled by Chinese National Subject Education Experts organized by Collaborative Innovation Center of Assessment toward Basic Education Quality, Beijing Normal University. The quality of the test tools meets the measurement requirements of large-scale testing.*
3. *The load of each item in the self-esteem scale is 0.678, 0.679, 0.615, 0.662, 0.488, 0.708, 0.712, 0.451, 0.686, and 0.679. The load of each item in the parent-child relationship scale is 0.79, 0.819, 0.6, 0.349, 0.411, 0.52, 0.635, 0.668, 0.521, 0.647, and 0.747. The load of each item in the peer relationship scale is 0.635, 0.509, 0.702, 0.494, 0.684, 0.726, 0.657, 0.718, 0.661, and 0.668. The load of each item in the teacher-student relationship scale is 0.743, 0.753, 0.763, 0.783, 0.728, 0.81, 0.69, 0.726, 0.684, 0.79, 0.815, 0.692, 0.693, 0.649, and 0.785. The load of each item in the pro-social behavior scale is 0.699, 0.756, 0.812, 0.742, and 0.741.*
4. *The role of bystanders means that once the bullying takes place, bystanders' silence, acquiescence, approval and participation in bullying will encourage the bullying behaviors. But if the bystanders object and stop the bullying behaviors, it will affect the progress of the bullying to a certain extent. When school bullying occurs, the companions of the bully are usually present. If they can play a role of a bystander and form an anti-bullying class or school culture, it will reduce the incidence or harm of school bullying.*

Acknowledgement

We acknowledge the financial support from the Collaborative Innovation Center of Assessment toward Basic Education Quality at Beijing Normal University.

References

- Barboza, G.E., Schiamberg, L.B., Oehmke, J., Korzeniewski, S.J., Post, L.A., & Heraux, C.G.(2009) Individual characteristics and the multiple contexts of adolescent bullying: An ecological perspective. *Journal of Youth and Adolescence*, 38(1):101-121.
- Chan, H.C.O. & Wong, D.S.W. (2015) The overlap between school bullying perpetra-

- tion and victimization: Assessing the Psychological, familial and school factors of Chinese adolescents in Hong Kong. *Journal of Child and Family Studies*, 24:3224-3234.
- Chen, C.J., & Zhi, T.J. (2017) The Influencing Factors and Long-term Mechanism of Bullying Prevention in Schools: Analysis on Bullying Behavior of Adolescent in 2015. *Research in Educational Development*, 37(20):31-41.
- Chu, Z.H. (2017) The Chinese Problem and Solution of School Bullying. *Journal of the Chinese Society of Education*, 12:42-48.
- Craig, W., et al. (2009) A Cross-national Profile of Bullying and Victimization among Adolescents in 40 Countries. *International Journal of Public Health*, 54(2): 216-224.
- Elgar, F. J., Pickett, K. E., & Pickett, W., et al. (2013) School bullying, homicide and income inequality: A cross-national pooled time series analysis. *International Journal of Public Health*, 58:237-245.
- Faris, R., & Felmlee, D. (2014) Casualties of Social Combat School Networks of Peer Victimization and Their Consequences. *American Sociological Review*, 79(2): 228-257.
- Ferguson, K.M., & Xie, B. (2012) Adult support and substance use among homeless youths who attend high school. *Child & Youth Care Forum*, 41(5): 427-445.
- Fu, Q., Land, K.C & Lamb, V.L. (2013) Bullying victimization, socioeconomic status and behavioral characteristics of 12th graders in the United States, 1989 to 2009: Repetitive trends and persistent risk differentials. *Child Indicators Research*, 6:1-21.
- Gage, N.A., Prykanowski, D.A., & Larson, A. (2014) School climate and bullying victimization: A latent class growth model analysis. *School Psychology Quarterly*, 29:256-271.
- Gu, C.H., & Zhang, W.X. (2003) A Survey on the relations of the bullying problem among primary school children to their personality. *Journal of Chinese Psychology Acta Psychologica Sinica*, 1:101-105.
- Huang, L. (2017) The situation and influencing factors of school bullying among Chinese 15-year-old students: Based on the analysis of PISA 2015 data of four provinces and cities in China. *Educational Science Research*, 11:36-42.
- Huang, L., & Zhao, D.C. (2018) Empirical research on relationship between family economic, social and cultural status and students' exposure to school bullying: mediating effects of parental support and teacher support. *Education Science*, 34(1):7-13.
- Huang, M.T. (2017) Foreign campus bullying legislative governance system: current situation, characteristics and reference: based on comparative analysis of seven developed countries. *Social Sciences in Ningxia*, 6:55-63.
- Ji, L.Q. et al. (2012) Peer relationship adversities and children's aggression during late childhood: the mediating roles of self-conception and peer beliefs. *Acta Psychologica Sinica*, 44(11):1479-1489.
- Wang, J., Iannotti R.J., & Nansel T.R. (2009) School bullying among adolescents in the United States: physical, verbal, relational and cyber. *Journal of Adolescent Health*, 45(4):368-375.
- Kou, Y., Fu, Y. & Zhang, Q.P. (2007) The prosocial behaviors endorsed by adolescents: A focus group study. *Sociological Studies*, 3:154-173, 245.
- Lazarus, P.J., Pfohl, W. (2012) Bullying prevention and intervention: information for educators. *Communiqué* (4):27-28.
- Lei, L., Wang, Y., Guo, B.L., et al.(2004) The influence of classroom norms on the relations between social behaviors and peer victimization. *Acta Psychologica Sinica*, 5:563-567.
- Li, M., & Guo, R.Y. (2017) Bibliometric and visualized analysis on school bullying research in other countries (regions). *International and Comparative Education*, 39(9):103-109.
- Liu, H.C., & Sun, Z. (2015) Stop! School bullying (micro survey). *People's Daily*, May 29th, 2015.
- Liu, X.K., Yan, Q. (2017) Research on current situation of school bullying and avoidance strategies in rural primary and secondary schools. *Contemporary Education Sciences*, 11:68-72.
- Ma, L.J. (2016) Keeping every student safe: research on issues related to school bullying and solutions. *Administration of Primary and Secondary School*, 8:4-8.
- Malecki, C.K., Demaray, M.K. & Coyle, S., et al. (2015). Frequency, power differential, and intentionality and the relationship to anxiety, depression and self-esteem for victims of bullying. *Child Youth Care Forum*, 44:115-131.
- Olweus, D. (1994) *Bullying at school: long-term outcomes for the victims and an effective school-based intervention program*. L. R. Huesmann. *Aggressive Behavior: Current Perspectives*. New York: Plenum Press, 97-130.

- Peets, K. & Kikas, E. (2006) Aggressive strategies and victimization during adolescence: Grade and gender differences and cross-informant agreement. *Aggressive Behavior*; 32(1): 68-79.
- Teng, H.C., Yao, J.L. (2018) Research on the factors affecting school bullying in primary and middle schools: based on the survey of more than 100,000 primary and middle school students in China. *Educational Science Research*, 3:5-11, 23.
- Veenstra, R. et al. (2005) Bullying and victimization in elementary schools: a comparison of bullies, victims and uninvolved preadolescents. *Developmental Psychology*, 41(4): 672-682.
- Wang, Y.X. (2016) Qualitative study on the problem of bullying in rural left-behind youth. *China Youth Study*, 12:63-68.
- Yu, Y.F., & Yu, X. (1993) The Self-Esteem Scale (SES). *Chinese Mental Health Journal*, Supplement: 251-252.
- Zhang, X.H., & Xiang, Z.Y. (2016) An empirical study on victimization and corresponding factors among juveniles in Zhejiang province: from the perspectives of life style theory and routine activity theory. *Academic Journal of Jinyang*, 5:101-105.
- Zhang, Y. (2017) China school Bullying Survey Report Released: Verbal Bullying is the Main Form. <http://www.chinanews.com/sh/2017/05-21/8229705.Shtml>; October 12th, 2017.
- Zhou, J.Y., & Feng, S.C. (2017) Investigation and analysis of school bullying in primary and secondary schools in Beijing. *China Education Development Report (2017)*. Social Sciences Academic Press, 215-229.
- Zhou, Y.X. (2017) Prevention of school bullying should start from family education. *China Education News*, December 20th, 2017.
- Zou, H., & Lin, C.D. (1999) Research on adolescents' communication goals and peer relationships. *Psychological Development and Education*, 2:2-7.

Received: 18 April 2019

Revised: 23 April 2019

Accepted: 09 May 2019

The Chinese version of this article has been published in J Capital Normal Univ (Soc Sci Ed) 2018; 6:171-185. The English version has been authorized for being publication in BECE by the author(s) and the Chinese journal.

胡咏梅, 李佳哲. 谁在受欺凌? — 中学生校园欺凌影响因素研究. 首都师范大学学报(社会科学版) 2018; 6:171-185.