

## THE INFLUENCE OF BULLYING VICTIMIZATION ON STUDENTS' LEARNING WEARINESS

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In China, learning weariness is the focus of attention, but few studies have explored the potential impact of bullying victimization on learning weariness. This study examines their relationship by exploring the mediating effect of two collectivism factors, attitude toward school and social alienation. One thousand one hundred and thirty-two students from 9 middle schools in rural China (11–15 years, 51.4% boys) participated in this study. Results show that bullying victimization has a significant impact on Chinese students' learning weariness. Both negative attitudes toward school and social alienation have significant mediate effects, and the indirect result of negative school attitude is significantly higher than social alienation.

**Key words:** bullying victimization, learning weariness, school attitude, social alienation

In the past, the studies on burnout always focus on the vocational field (Maslach, 1976, 1998), while in the nearly thirty years, the researchers have begun turn to study college students' learning weariness (Gold et al., 1989; Meier & Schmeck, 1985; Slivar, 2001). The weariness is defined by the three dimensions of exhaustion, cynicism, and inefficiency (Maslach et al., 2001). Both workers and college students are the individuals who suffer stress experience within a more massive organization and could not drop out, which is similar to the Chinese middle school students who are under the nine-year compulsory education period. The Chinese culture emphasizes academic performance and an insatiable desire for knowledge (Fulgini et al., 1999; Liu et al., 2014). Both family and school are hardly reluctant to accept students' learning weariness. Unfortunately, many types of researches confirmed that more than 1/2 students have some degree of learning weariness in China (Guo & Yu, 2013; Zhang, 2010), and that is considered to be the main reason for students to drop out of school (Juvonen et al., 2011). Exploring the causes of learning weariness and promoting students' learning motivation has always been one of China's research hotspots.

In Western and Eastern, extensive studies have revealed the dire consequences of bullying victimization, such as deleterious psychological, social, and academic achievement (Caputo, 2014; Felix & McMahan, 2006; Fisher et al., 2015; van Lier et al., 2012). In China, the research on school bullying is growing rapidly, and junior high school (from

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This work was supported by the Beijing Education Science Plan (Number CHEA2020024).

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7th to 9th grade) is a hard-hit area for school bullying (Feng & Li, 2017; Yang et al., 2017). Bullying victimization can exert adverse effects on many aspects of development and function as a precursor of low academic achievement (Caputo, 2014; Hay & Meldrum, 2010; Liu et al., 2014; Menesini & Salmivalli, 2017). Bullying is associated with low socio-economic incomes, but the national average scores might mask extremely diverse intra-national realities (Sivaraman et al., 2019; Tramontano et al., 2020). Previous research has been mostly studied in Western countries and the high eco-countries in Asia, such as Japan, South Korea, and China's urban areas (Chai et al., 2020; Sittichai & Smith, 2015). The present study seeks to fill that gap by using the rural Chinese students' survey results.

Collectivism-individualism is the dimension that cannot be ignored when discussing school bullying and learning weariness in China (Sittichai & Smith, 2015). The Asian countries are generally higher on the collectivism index (China is one of the highest countries) than most western countries (Hofstede et al., 2010), especially in Chinese adolescents (Li et al., 2010). In this cultural context, individuals are encouraged to join groups, connect with other persons and report less social exclusion (Sittichai & Smith, 2015). Peer acceptance and social competence are related to students' academic attitudes and performance in China (Chen et al., 2003).

Many types of interventions can diminish the harm that results from bullying, including family support and schools peer-based group helping (Hawton et al., 2006). Sometimes, children victimized by peers are also victimized by their family (Finkelhor et al., 2007), especially in the risk family. Risk family refers to distressing and/or traumatic events during childhood, such as exposure to child maltreatment, caregiver risk factors such as separation or divorce. That will have a negative impact on child development (Finkelhor et al., 2015). In China, the left-behind family also has a similar pattern. The left-behind families are the one or both parents who are outgoing or being business and leave the children alone. Based on China's fifth population census, 13.5% of children are left-behind children. In the rural areas, the number increases to 86.5% (Zhou & Duan, 2006). Accordingly, the present study aims to test bullying involvement as a factor associated with learning weariness among adolescents in rural China. And evaluating whether some social psychological correlates, referred to as attitude toward school and social alienation, are related to bullying and learning weariness.

Although extant empirical literature has documented an association between bullying victimization and learning weariness, few studies discussed negatively toward school or social alienation. No study to date has specifically examined the relationships between these factors.

School engagement consists of behavioral, emotional, and cognitive components (Fredricks et al., 2004). The negative emotional reactions to the learning environment are presumed to influence willingness to study and disengagement from school (Baiden et al., 2020). Concerning school attitude studies, it is demonstrated that being a victim of bullying leads to negative emotions (boredom, sadness, fear). In this way, the attitude toward school has a significant influence on learning performance. There is a relationship between attitude toward school and academic performance (Blanco & Rodríguez-

Martínez, 2015). The students who are wary of learning usually begin from disliking school (Guo & Yu, 2013).

The sense of belonging to a school community favours academic identity development and positive social experiences, which prefer behaving well and positive evaluation of learning (Blanco & Rodríguez-Martínez, 2015; Seidel & Vaughn, 1991). While alienated students are less likely to be influenced by societal norms relating to academic activities (such as academic clubs and non-competitive sports), they tend to devalue academic activities and have low-performance self-esteem (Seidel & Vaughn, 1991). Many researchers viewed social alienation as a consequence of peer victimization (Kochel et al., 2012; Rudolph et al., 2014). Victims of school bullying will develop the tendency to have few friends and withdraw to avoid further victimization (Bass et al., 2016; Eslea et al., 2004), and the peers may also form a negative attitude about victimized children and avoid associating with victims (Kochel et al., 2012; Rudolph et al., 2014). As a result, bullying victims become alienated from the mainstream peer group.

Previous studies have investigated bullying in schools (Caputo, 2014; Felix & McMahon, 2006; Fisher et al., 2015; van Lier et al., 2012), in high-income groups (Menesini & Salmivalli, 2017; Sittichai & Smith, 2015), and the learning weariness or school dropout (Baiden et al., 2020; Caputo, 2014; Fredricks et al., 2004; Liu et al., 2014). However, less of them focus on other factors of bullying. Moreover, studies examining school dropouts often follow negative emotions and disengagement (Baiden et al., 2020; Fredricks et al., 2004). Therefore, this paper aims not only to provide a clinical viewpoint on bullying correlates from an individualistic perspective, but also to explore the potential association between victimization and some psychological measures regarding a student in the Chinese culture. This study is meaningful, especially in rural China, which emphasizes learning but pays less attention to school bullying.

This study examines whether attitude toward school and social alienation mediate the relationship between bullying victimization and learning weariness. It is hypothesized that the prevalence of learning weariness among bullied adolescents is primarily due to negative attitudes toward school (hypothesis 1), and social alienation mediates the relationship between bullying victimization and learning weariness (hypothesis 2).

School, as the main place of adolescent learning activities taking place, absorbs a very significant amount of children's waking time and influences adolescent development in many aspects (Croll et al., 2008). The influence of negative attitude toward school should be greater than the impact of social alienation on learning, despite lacking peer interaction will affect adolescent psychological development. This study hypothesizes that the mediating effect of the school's negative attitude is more remarkable than social alienation (hypothesis 3).

## METHOD

### *Participants and Procedures*

The sample consisted of 1,425 (53.2% boys and 46.8% girls) junior high school students from 54

classes in 10 schools in suburban Beijing (China). Measures were administered in classroom settings, using smartphones that were pre-installed with a test program. Participants with mean response time under 500 ms were excluded. Likewise, inconsistent data on two duplicate items we designed in the questionnaire, was subtracted either. Additionally, given the structure of nested data, we deleted the data of classes whose size less than 10 (Mathieu et al., 2012). The remaining 1,132 copies were used in subsequent analysis. Ages ranged between 11 to 15 years, and 51.4% of the adolescents were boys, 56% were grade 7 and the other 44% were grade 8, most of the students were the only child of the family (63.7%), 23.1% were the no travel students, 52.7% of the students were the rural household registration.

### *Measures*

*Bullying victimization.* The bullying victimization scale contained eight common bullying behaviors (e.g., “Someone often makes fun of me,” “someone often hit, kicked, or pushed me intently”). The participants responded on a 4-point Likert scale ranging from 1 (very inconsistent) to 4 (very consistent). The higher score evinced a stronger predictive of victimization. Cronbach’s alpha was .851. Confirmatory factor analysis (CFA) revealed that all eight items loaded significantly on the latent factor.

*Learning weariness.* The learning weariness subscale includes twelve items (e.g., “I don’t want to write homework,” “learning is nothing but boring”). The participants responded on a 4-point Likert scale ranging from 1 (very inconsistent) to 4 (very consistent). The higher score evinced a stronger predictive of learning weariness. The mean scale was calculated for each scale of 12-items from respondents. Cronbach’s alpha was .900. CFA revealed that all twelve items loaded significantly on the latent factor.

*Attitude toward school.* The attitude toward school subscale includes eight items (e.g., “I hate this school,” “I don’t want to go to school”). The participants responded on a 4-point Likert scale ranging from 1 (very inconsistent) to 4 (very consistent). The higher score evinced a stronger predictive of the negative attitude toward school. The mean scale was calculated for each scale of 8-items from respondents. Cronbach’s alpha was .881. CFA revealed that all eight items loaded significantly on the latent factor.

*Social alienation.* The social alienation subscale includes ten items (e.g., “I feel helpless about many things,” “I always feel blue”). The participants responded on a 4-point Likert scale ranging from 1 (very inconsistent) to 4 (very consistent). The higher score evinced a stronger predictive of social alienation. The mean scale was calculated for each scale of 10-items from respondents. Cronbach’s alpha was .871. CFA revealed that all ten items loaded significantly on the same factor.

### *Statistical Analysis*

To each psychological measure’s construct validity, we used CFA. Besides, partial correlation analysis was used to provide preliminary evidence of their relationship. Then we conducted structural equation modeling (SEM) to analyze the relationships between the four multiple-item constructs. SPSS 24.0, AMOS 20.0, and Mplus 8.3 are adopted as the tools of data analysis.

## **RESULTS**

### *Confirmatory Factor Analyses*

To perform a CFA, all of the constructs and reflective indicators were depicted and composed as a measurement model in which all constructs were allowed to correlate with each other. All standardized factor loadings are higher than 0.6 and significant, the composite reliability is very well (bullying victimization, .854; social alienation, .871; school attitude, .882; learning weariness, .901). Then, we examined a four-factor model, in which bullying victimization, social alienation, school attitude, and learning weariness were included. As suggested by Hu and Bentler (1999), the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and standard root mean square residual (SRMR) were used to assess the model fit. A

Table 1. The Discriminant Validity of the Four Constructs ( $N = 1,132$ )

Pairs of correlation	Point Estimate	SE	$\phi - 2\sigma$	$\phi + 2\sigma$	Bootstrap for 2,000 times 95% confidence interval			
					Bias-corrected		Percentile	
					LL	UL	LL	UL
Bullying V $\longleftrightarrow$ Social A	.845	.017	.811	.879	.810	.877	.811	.878
Bullying V $\longleftrightarrow$ School A	.794	.025	.744	.844	.746	.843	.745	.842
Learning W $\longleftrightarrow$ Bullying V	.821	.021	.779	.863	.782	.861	.782	.861
Social A $\longleftrightarrow$ School A	.861	.016	.829	.893	.826	.890	.828	.891
Learning W $\longleftrightarrow$ Social A	.925	.012	.901	.949	.900	.949	.900	.949
Learning W $\longleftrightarrow$ School A	.967	.011	.945	.989	.944	.985	.945	.987

Note. LL = lower limit; UL = upper limit.

cutoff value close to or above .9 for CFI and TLI and a cutoff value below .08 for RMSEA and SRMR indicate a relatively acceptable fit between the proposed model and the observed data (Hu & Bentler, 1999). The hypothesized four-factor model fitted the data well:  $\chi^2(659) = 1928.513$ ,  $p < .001$ , CFI = .938, TLI = .933, SRMR = .033, RMSEA = .041, 90% confidence interval [CI; .039, .043].

The discriminant validity of the four constructs was tested by bootstrap 2,000 times 95% CI. A model was constructed for each of the six possible paired correlations between the latent variables. Then, the bias-corrected CI and the percentile CI of the paired correlation among the latent variables were examined. The bootstrap percentile method constructs the CI based on the estimate of the parameter and the standard deviation (Efron & Tibshirani, 1993). And the bias-corrected method changes the percentile selected to increase the confidence. The bootstrap percentile CIs and the bias-corrected bootstrap CIs were estimated in this study. The results were presented in Table 1. Support for discriminant validity is provided if the value of 1 is not included within the computed CI,  $\phi \pm 2\sigma$  (Torkzadeh et al., 2003). The discriminant validities of the four constructs were acceptable in this study.

### *Preliminary Analyses*

*Bullying victimization, social alienation, school attitude and learning weariness.* Means and standard deviations among different groups are presented in Table 2. Potential covariates including gender, grade and only/non-only child, travel times and urban/rural household registration in family were examined. Boys reported significantly higher bullying victimization than girls ( $t = 2.418$ ,  $p < .05$ ), but there were no gender differences in other three aspects. Compared with grade 7, adolescents of grade 8 were facing significant more bullying behaviors ( $t = 3.428$ ,  $p = .001$ ), experienced significant more social alienation ( $t = 6.411$ ,  $p < .001$ ), had significant more negative attitude

Table 2. Means and Standard Deviation of Four Constructs in Different Groups ( $N = 1,132$ )

	Bullying V	School A	Social A	Learning W
Boy	1.635 (.681)	1.550 (.672)	1.825 (.717)	1.644 (.663)
Girl	1.546 (.554)	1.526 (.597)	1.860 (.660)	1.615 (.585)
Grade 7	1.535 (.591)	1.446 (.579)	1.726 (.644)	1.528 (.577)
Grade 8	1.664 (.657)	1.656 (.686)	1.989 (.717)	1.760 (.662)
Only child	1.580 (.631)	1.541 (.657)	1.820 (.681)	1.614 (.629)
Non-only child	1.613 (.611)	1.533 (.600)	1.881 (.703)	1.658 (.621)
No travel each year	1.726 (.726)	1.632 (.705)	1.970 (.748)	1.739 (.707)
More than one travel each year	1.551 (.584)	1.510 (.612)	1.803 (.667)	1.597 (.596)
Urban household registration	1.515 (.609)	1.492 (.632)	1.787 (.669)	1.565 (.614)
Rural household registration	1.660 (.629)	1.580 (.638)	1.891 (.704)	1.688 (.632)

Table 3. Partial Correlations Between Measures and Descriptive Statistics ( $N = 1,132$ )

	Bullying victimization	Learning weariness	School attitude	Social alienation
Bullying V	—			
Learning W	.716***	—		
School A	.690***	.858***	—	
Social A	.725***	.808***	.742***	—

\*\*\* $p < .001$ .

toward school ( $t = 5.473, p < .001$ ), and learning weariness ( $t = 6.167, p < .001$ ). No difference was found between only child and non-only child in the four measures. Compared with family who did not travel in a whole year, those travel many times reported significantly lower bullying victimization ( $t = 3.571, p < .001$ ), negative attitude toward school ( $t = 2.515, p < .05$ ), social alienation ( $t = 3.237, p = .001$ ), and learning weariness ( $t = 2.958, p < .01$ ). Adolescents with urban household registration were experienced significant less bullying victimization ( $t = -3.942, p < .001$ ), negative attitude toward school ( $t = -2.336, p < .05$ ), social alienation ( $t = -2.570, p = .01$ ), and learning weariness ( $t = -3.304, p = .001$ ).

*Partial correlation between measures.* Partial correlations are summarized in Table 3. The mediating role of social alienation in the relationship between bullying victimization and learning weariness required that both bullying victimization and social alienation were related to learning weariness and that bullying victimization and social alienation were interrelated. Likewise, the mediating role of attitude toward school in the relationship between bullying victimization and learning weariness required that both bullying

victimization and attitude toward school were related to learning weariness. That bullying victimization and attitude toward school were interrelated. All correlations between measures of the mediation models were statistically significant. Hence, the prerequisites for testing the mediation hypotheses were met.

### *Model Analyses*

As the partial correlation of measures suggests the predictors were moderately marginally correlated, it is necessary to detect the data's severe collinearity. Variance inflation factor (VIF) has been widely applied in scientific literature to diagnose the existence of collinearity. It is generally accepted that values of VIF higher than 10 indicate severe multicollinearity (O'Brien, 2007). In our study, the VIF of bullying victimization, school attitude, and social alienation was 2.394, 2.582, and 2.821. Furthermore, structural equation models are robust against multicollinearity (Malhotra et al., 1999). These results permitted the feasibility of the following analysis.

*Multiple mediation tests.* Given the hierarchical data structure, because the interactions of different levels aren't the primary concern of this paper, we use a sandwich estimator to compute the standard error taking into account stratification, non-independence of observations due to cluster sampling (McNeish et al., 2017; Rabe-Hesketh & Skrondal, 2006).

The multiple mediate effect comparison was tested using the bootstrapping method. Bootstrapping is more powerful than the Sobel test and the causal steps approach to testing mediation effects (Williams & MacKinnon, 2008). Hayes (2009) argued that bootstrapping was a well alternative to evaluate mediation and recommended at least 5,000 times repeated. This study conducted a mediation effects test following Hayes' suggestion by the procedure of SPSS 24.0. The procedure yields a 95-percentile bootstrap CI. If zero is not between the lower and upper bound, then the analyst can claim that the indirect effect is not zero with 95% confidence (Hayes, 2009, 2017). The results are presented in Table 4, and the multiple mediation models for learning weariness

Table 4. Results of Multiple Mediation Test ( $N = 1,132$ )

	Predictor	Effect	SE	t	p	95% CI	
						LL	UL
Total effect		.727	.022	33.595	.000	.682	.768
Direct effect	Bullying V	.104	.021	5.004	.000	.063	.144
Indirect effect		.622	.026	23.698	.000	.572	.678
	School A	.376	.025	15.327	.000	.330	.423
	Social A	.246	.019	12.971	.000	.213	.288
	School A-Social A	.130	.035	3.701	.000	.061	.196

*Note.* CI = confidence interval; LL = lower limit; UL = upper limit.

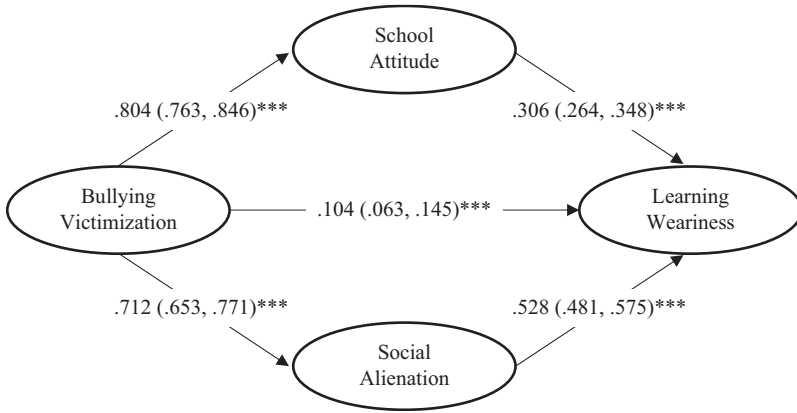


Fig. 1. Multiple Mediation Models for Learning Weariness

Note. Unstandardized coefficients are reported. \*\*\**p* < .001.

are illustrated in Fig. 1.

Bullying victimization was directly associated with learning weariness, ( $\beta = .104$ , 95% CI [.063, .144]); the total indirect effect was significant ( $\beta = .622$ , 95% CI [.572, .678]). Specific significant indirect effects operating via school attitude ( $\beta = .376$ , 95% CI [.330, .423]), and social alienation ( $\beta = .246$ , 95% CI [.213, .288]) were obtained. The indirect effect of school attitude was significantly larger than the indirect effect of social alienation ( $\Delta\beta = .130$ , 95%  $\Delta$ CI [.061, .192]). The model accounted for 79.7% of the variance in learning weariness scores.

*Multigroup analysis.* As for the differences of demographic variables in four constructs, we tested the invariant of the model in different groups. If the variation in chi-square[ $\Delta$ CMIN] is not significant, there is no difference between two models. Due to the variation in chi-square is susceptible to the sample size, there are two complementary reference indicators, the variation in CFI is less than .01, and the variation in TLI is less than .05 (Cheung & Rensvold, 2002; Little, 1997). The multigroup analysis of demographics shows that there were no significant differences between groups.

### DISCUSSION

School bullying is recognized globally as a complex and serious problem, and perhaps the biggest single threat to genuinely comprehensive schooling (Gorard & See, 2011; Menesini & Salmivalli, 2017). Bullying victimization will cause students' low learning motivation and low commitment to study (Caputo, 2014; Leroy & Bressoux, 2016; Olweus, 2013; Schwartz et al., 2005). Exploring the role bullying victimization plays in learning weariness will be a great inspiration for us to understand students' learning weariness better and raise awareness about school bullying in rural China.

Findings from the present study support our expectations that negative attitudes



toward school and social alienation mediated the relationship between bullying victimization and learning weariness. And the negative attitude toward school shows a higher effect than social alienation.

The extensive research always separates investigated school bullying, school disengagement, and academic achievement. As school plays a central role in students' lives, the attitude toward school of adolescents is essential (Croll et al., 2008), and a positive attitude toward school was a good predictor of academic success (Akey, 2006; Blanco & Rodríguez-Martínez, 2015). The attitude toward school correlates with the conflict resolution ability, the higher one rates himself on peer conflict resolution, the more he likes school (Butovskaya et al., 2007). Victimized children report being unhappy, feeling unsafe and avoiding school more over time than their non-abused peers (Vaillancourt et al., 2013). Our findings showed a predictive relation between them. Individuals with high bullying victims tend to have a negative attitude toward school (Holfve-Sabel & Gustafsson, 2005; Şeker, 2011), leading them to learn weariness and lack of motivation. The indirect effect of attitude toward school explained a large amount of variance of learning weariness than the direct effect of bullying victimization. Adolescents, who are victimized by peers, have a more negative attitude toward school. That, in turn, makes them vulnerable to learning weariness.

In line with our hypotheses, findings also revealed that social alienation mediated the association between bullying victimization and learning weariness. In other words, adolescents with high bullying victim experiences tend to feel social alienation, resulting in their learning weariness, and less likely to engage in academic activities or have confidence in academic success. The mediation effect of social alienation was partial and significant. These findings are also consistent with previous studies. Bullying victimization is correlated with loneliness and isolation in the school context and low learning motivation (Caputo, 2014; Rudolph et al., 2014). The quality of the student's relationship with peers is one of the most salient predictors of school dropout (Doren et al., 2014; Johnson, 2005).

Moreover, the results are consistent with our hypotheses that the attitude toward school, compared with social alienation, has a more significant indirect effect on the relationship between bullying victimization and learning weariness. This indicates that the contribution of bullying victimization to the vulnerability for learning weariness is primarily based on its effect on the adolescent's negative attitude toward school.

Besides, the result of cross-validation ascertains the robustness of the hypotheses model. The model is a generalizable structure in the population and could explain the variance of victims' learning weariness in middle school.

### STRENGTHS AND LIMITATIONS

Our findings add to the existing literature in the following three ways:

First, this study extends past research by demonstrating a multi-mediation model in relation to bullying victimization, attitude toward school and social alienation with

adolescent learning weariness and confirming the significant indirect effect of negative attitude toward school.

Second, we are considering bullying in rural areas. Most research has been done in the countries with the highest GDP, from the Western to the Eastern (Chai et al., 2020; Sittichai & Smith, 2015), with less focus on low-income victims. Moreover, studies examining the socio-economic impact negatively affect bullying (Tramontano et al., 2020). The current study examined the impact to which bullying is associated with learning weariness is warranted and expand the result to the low-income group. In the rural area, people are closer to each other and their families always have relatives. As a collectivist culture country like China, rural areas care more about their in-groups (such as family, tribe, etc.) and got higher collectivism scores. In that way, they are more careful about shaping their behavior primarily based on in-group norms, which may increase the bullying effects.

Last but not least, our study tries to find a way to help bullying victims who lack parental bonding. As we all know that parents and school are two supporting systems for the bullying victim. According to the left-behind children reported, they have poor relationships with parents. Chai et al. (2020) found that bullying victims were more likely to report poor relationships with parents and teachers than their non-victim counterparts. We replicated and confirmed the results observed in their study among the left-behind children. Because their parents cannot live around, we should pay more attention to the schools and teachers supporting them.

Despite these strengths, several limitations of the current study should be noted. First, the current study uses a cross-sectional design, which precludes directionality and makes it impossible to establish a relationship between the variables in question conclusively. Future studies may employ longitudinal designs to allow examining temporal sequencing between variables in play. Second, all of the data came from self-report measures, which could have resulted in a shared source and shared method variance. A multi-method approach may better understand the relevant concepts and further inform the associations between bullying victimization, attitude toward school, social alienation and learning weariness.

## IMPLICATION

Secondary education is a special period filled with various challenges to adolescence, both on academic and peer relationship (Juvonen et al., 2011). Our research showed that adolescents exposed to school bullying have a high risk of learning weariness. This relationship should be taken into account when planning preventive measures against school bullying and learning weariness. Furthermore, this study pointed out that the school's negative attitude played an important factor in predicting learning weariness. A previous study demonstrated that school enjoyment is easy to enhance all students' learner identities, including the more reluctant learners (Gorard & See, 2011).

Therefore, it is not an overstatement that school plays a great role in the anti-

bullying intervention and academic motivation promotion, especially for the left-behind children who lack parental bonding. It is legally required in several countries that schools have an anti-bullying policy (Menesini & Salmivalli, 2017). That policy system has been proved to be effective in high-quality evaluations. What's more, the primary school's early warning systems also can be developed to help the students suffer from bullying (Baiden et al., 2020).

## CONCLUSION

The current study highlights the associations between bullying victimization, attitude toward school, social alienation and learning weariness within a multi-mediational model in Chinese students. More specifically, our findings demonstrate that the indirect effect of a negative attitude toward school is higher than social alienation.

From a development standpoint, adolescence in middle school presents a critical period, which is often characterized by increasing peer interaction and academic demand. Given the potentially severe consequences of bullying victimization, it is necessary to protect students from school bullying and develop an adequate treatment to help adolescents who bullied by peers. This indicates that more effective is required to enhance school support mechanisms and build strong social connections in middle school.

## AUTHOR'S CONTRIBUTION

C.W., Y.Y. and L.B.P. contributed substantially to the conception of the work. C.W. conducted the data analyses and first wrote the manuscript. Y.Y., L.B.P. and L.Y. revised the manuscript. L.F. instructed L.Y. conducting the additional data analyses of the revision. Y.S.Q. provided support for the research design and data collection. All authors confirmed the final version of the manuscript for submission.

## CONFLICT OF INTEREST

All authors of this paper declare that they have no conflict of interest.

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## APPENDIX

**Questionnaires****Bullying victimization**

1. Someone often makes fun of me.
2. Someone often hit, kicked, or pushed me intently.
3. I often be threatened or intimidated.
4. My belongings were often be vandalized.
5. I was robbed or extorted for money or goods.
6. People always exclude me.
7. People always speak ill of me behind my back.
8. Someone is always take advantage of me.

**Learning weariness**

1. Learning is nothing but boring.
2. Study is a burden and make me feel very painful.
3. I feel listless in class.
4. I was always absent-minded in class and couldn't listen to what the teacher was saying.
5. I don't want to write homework.
6. Whenever think about study, I get a headache.
7. I think that I still go to school just for get a diploma.
8. When I go into school, I feel dizzy and nauseous.
9. My future is dim and hopeless.
10. I go to school just to kill time.
11. I don't think myself are good at academic.
12. I take a passive attitude towards my school time.

**Attitude toward school**

1. I get sick and tired of school.
2. I feel that school has nothing to do with me.
3. I feel good at school. (R)
4. I look forward to leaving school early to find the relief.
5. I feel safe at school. (R)
6. I feel bored at school.
7. I really want to drop out.
8. I hate this school.
9. I don't want to go to school.
10. There is nothing that makes me happy at school.

**Social alienation**

1. I feel helpless about many things.
2. Things change so quickly that I feel I can't control them.
3. I have a feeling of being pushed by something.
4. I feel that my life lacks of fulfillment.
5. I always feel blue.
6. I don't feel comfortable in the classroom.
7. I always defy my teacher.
8. I feel like I have no purpose in my life.
9. I often feel be compelled to do things I don't want to do.
10. I feel be bind and lost my freedom.