



# Bullying Victimization and Adolescents' Social Anxiety: Roles of Shame and Self-Esteem

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Accepted: 21 September 2020 / Published online: 25 September 2020  
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## Abstract

The present study aimed to explore the mechanisms underlying the association between bullying victimization and social anxiety. A total of 4790 Chinese high school students were administered four scales, including the Delaware bullying victimization scale, a trauma-related shame inventory, a social anxiety scale, and a self-esteem scale. The results showed that bullying victimization was directly and positively associated with social anxiety. In addition, the positive association between bullying victimization and social anxiety was mediated by shame and self-esteem, respectively. Bullying victimization was also related to social anxiety through shame via self-esteem. These findings suggested that shame and self-esteem have important mediating effects in the relation between bullying victimization and social anxiety. More attention should be paid to addressing adolescents' negative emotions and self-evaluation after being bullied.

**Keywords** Bullying victimization · Social anxiety · Shame · Self-esteem

## 1 Introduction

School bullying is a longstanding worldwide problem that leads to negative consequences for all students involved, especially the victims of bullying. Many victims experience physical, verbal, relational, or cyber-based harm from one or several peers repeatedly over a long time (Olweus 1993; Smith et al. 2008). These victims are likely to show mental, behavioral, or physical problems (Reijntjes et al. 2010; Wolke and

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Lereya 2015). Social anxiety is one of the most common mental problems (Coelho and Romao 2018; Pontillo et al. 2019). It refers to irrational and excessive fear of interpersonal interactions and performance in social situations and embodies intense social tension, distressed emotional experiences, and behavioral tendencies toward avoiding social interaction (Bowles 2016; Van Zalk and Tillfors 2017; Vassilopoulos et al. 2017). It is important to detect and address social anxiety in a timely manner because it may progress to more serious mental problems (Pontillo et al. 2017; Van Zalk and Tillfors 2017), destroy victims' social networks (Aderka et al. 2012), and reduce education and employment opportunities in adulthood (Nagata et al. 2015).

Extant literature has addressed the positive association between bullying victimization and social anxiety (Boulton 2013; Coelho and Romao 2018). Some researchers have suggested it is necessary to evaluate peer victimization experiences among children and adolescents with social anxiety disorder (Pontillo et al. 2019). However, limited studies have examined the mechanisms underlying the association between bullying victimization and social anxiety from a perspective of the victims' self-examination of their internal world, such as shame and self-esteem. Some studies assessed the role of shame, but these studies focused on bullies' hurting behavior and bystanders' apathy, respectively (Mazzone et al. 2016; Olthof 2012), and ignored victims' perceived shame. Victims' shame, which involves embarrassment, frustration, and fear after being bullied (Ida et al. 2018; Irwin et al. 2016), may be an important predictor of social anxiety (Gilbert 2000; Wilson et al. 2006). Besides, after bullying events, the victims may experience negative emotions and self-evaluation, which elicits a lower level of self-esteem (Jones et al. 2014; Tsaousis 2016). A lower level of self-esteem will in turn lead to victims' social anxiety (Bowles 2016; Hiller et al. 2017). Nevertheless, few has assessed the mediation effect of self-esteem in the relation between bullying victimization and social anxiety. Therefore, this study investigated the mechanisms underlying the association between adolescents' bullying victimization and social anxiety, with shame and self-esteem as mediators.

### 1.1 Bullying Victimization and Social Anxiety

Students' anxiety and stress are closely associated with poor peer relationships (Haq et al. 2018). The chronic stress model (Dohrenwend and Dohrenwend 1981) suggests that bullying victimization can produce cumulative effects on victims' psychological distress, including depression and anxiety. It is well documented that students who have been bullied tend to report social anxiety (Boulton 2013; Pontillo et al. 2019), with this positive relation emphasized when assessing social anxiety disorder. Specifically, students who suffered from physical, verbal, and relational bullying would be maliciously pushed, threatened, or even punched and kicked; and would be nicknamed, ridiculed, and excluded (Pontillo et al. 2019; Tsaousis 2016; Wolke and Lereya 2015). These painful encounters may overwhelm the victims' coping mechanisms (Dao et al. 2006), eliciting fear and helplessness. Consequently, they may show anxiety when socializing with others, along with withdrawal and social avoidance behavior (Coelho and Romao 2018). As fear of approaching these bullying threats leads to the victims' social avoidance, previous studies identified a direct positive association between

bullying victimization and social anxiety, from the perspective of the victims protecting themselves from being bullied again. However, limited research has focused on the victims' inner world, and sought to understand the relation between bullying victimization and social anxiety from the self-examination perspective, involving their perceived shame and self-esteem after being bullied.

## 1.2 Potential Mediating Roles of Shame and Self-Esteem

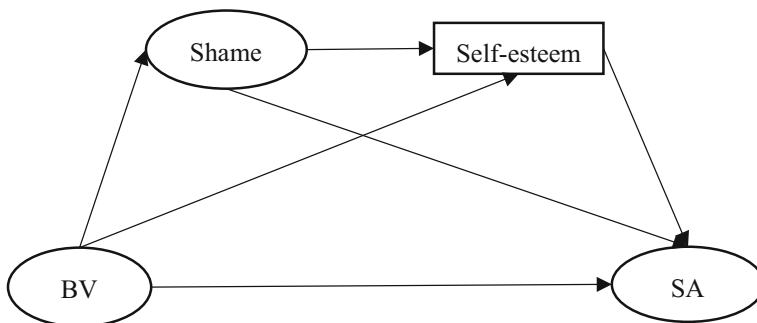
The victims' emotional and cognitive experiences during self-examination potentially link their bullying victimization and social anxiety, with increased shame and decreased self-esteem being typical outcomes. Shame has been assessed following different traumatic experiences, such as sexual abuse, war, and violence (Amstadter and Vernon 2008; Budden 2009; Ida et al. 2018; Lee et al. 2001). In the bullying literature, some studies focused on the bullies' or bystanders' shame (Mazzone et al. 2016; Olthof 2012), but few studies investigated the victims' shame after being bullied (Irwin et al. 2016; Ida et al. 2018). Based on the shattered assumptions theory (Janoff-Bulman 2010), bullying victimization as a type of traumatic experience (Kaess 2018; Nielsen et al. 2015) may shatter students' stable belief systems related to self, others, and the world. It may also break their internal equilibrium, and lead to self-doubt and emotional insecurity (Zhen et al. 2017, 2018). Victims of school bullying are also likely to doubt themselves and attribute their victimization to their own faults and weakness (Coates and Messman-Moore 2014). Then they may experience increased shame involving embarrassment, frustration, fear, and disgust related to self-underestimation and stigmatization by others (Gilbert 1997; Greene and Britton 2013; Yelsma et al. 2002). Shame is an intense and painful emotion (Wilson et al. 2006; Ida et al. 2018), which makes victims unwilling to face what they have experienced. Victims are therefore often eager to escape or hide (Yelsma et al. 2002), which may result in social anxiety (Gilbert 2000). Social avoidance or isolation is also an approach that victims use to dissipate shame (Nathanson 1992; Wilson et al. 2006). Therefore, it is possible that shame is an important mediator between bullying victimization and social anxiety.

Bullying victimization is also deleterious to students' self-esteem (Låftman and Modin 2017; Tsaousis 2016). Self-esteem involves an individual's judgment and attitudes about their competence and sense of value (Branden 1969; James 1890; Rosenberg 1989). Students' development of self-esteem largely relies on peer relationships and peer evaluations (Birkeland et al. 2014; Gorrese and Ruggieri 2013). Bullying implies the most dysfunctional peer relationship (Olweus 1993). Bullying victimization makes victims feel they are unacceptable, excluded, and incompetent (Boulton 2013), which hinders their self-identification and leads to low levels of self-esteem (Extremera et al. 2018). Decreased self-esteem is closely associated with higher levels of social anxiety (Bowles 2016; Hiller et al. 2017). The terror management theory anxiety-buffer hypothesis (Greenberg et al. 1992) posits that self-esteem is a natural buffer to deal with anxiety. Individuals with low levels of self-esteem doubt their own ability to tackle social problems and have more self-deprecation; the regulation function of their self-esteem is largely limited to buffering anxiety in social situations (Pan et al. 2018). Therefore, students' self-esteem may also mediate the relation between bullying victimization and social anxiety.

It is noteworthy that shame after bullying victimization may also be related to self-esteem (Yelsma et al. 2002). Research suggests that self-esteem is negatively associated with shame, with some researchers arguing that proneness to shame may be a primary source of low self-esteem (Greene and Britton 2013; Jacoby 1994; Yelsma et al. 2002). On one hand, self-esteem depends upon how a person looks himself (Haq 2016). Shame in itself is a strong negative emotional experience concerning a person's own weakness and others' taunts, which directly damages the victim's sense of competence and worth and leads to low levels of self-esteem. On the other hand, previous studies suggested that different emotional states can regulate individuals' cognition to different degrees (Mitchell and Phillips 2007), and negative emotions may trigger attention bias toward negative stimuli in the environment (Macatee et al. 2017). Shame is primarily manifested as an emotion, whereas self-esteem, as a more complex cognition, is possibly influenced by shame (Yelsma et al. 2002). Therefore, it is likely that victims with higher levels of shame will be more sensitive to others' negative evaluations than those with lower levels of shame, which may harm their self-esteem.

### 1.3 The Present Study

Although previous studies identified a direct relation between bullying victimization and social anxiety (Coelho and Romao 2018; Pontillo et al. 2019), most studies explained this relation from the perspective of avoiding being bullied again. After being bullied, it is common that the victims experience negative emotions and evaluation related to themselves, but these are hard to be detected by others. Therefore, to get a better understanding of the victims, and to carry out more effective interventions, this study sought to understand this relation from a self-examination perspective, and examined the roles of shame and self-esteem to illuminate the underlying influencing mechanisms. Based on the chronic stress model (Dohrenwend and Dohrenwend 1981), the shattered assumptions theory (Janoff-Bulman 2010), the anxiety-buffer hypothesis (Greenberg et al. 1992), and previous research findings, we hypothesized that: bullying victimization is significantly and positively associated with social anxiety ( $H_1$ ); bullying victimization is positively associated with social anxiety with shame ( $H_{2a}$ ) or self-esteem ( $H_{2b}$ ) as a mediator; and bullying victimization is positively associated with social anxiety through shame via self-esteem ( $H_3$ ). The hypothesized chain model of mediating effects is shown in Fig. 1.



**Fig. 1** The hypothesized model of the mediating effects of shame and self-esteem in the relation between bullying victimization and social anxiety. BV = Bullying victimization, SA = Social anxiety

## 2 Method

### 2.1 Participants and Procedures

This study used convenience sampling to recruit participants. We aimed to recruit a relatively large sample to better understand the situation of school bullying among adolescents. After obtaining the approval of school principals of two senior high schools in Anhui Province, China, we recruited all students from Grades 10 and 11 who attended school on the investigation day. Students in Grade 12 were not recruited because of their busy academic schedule. In total, 5013 students participated in our paper-and-pencil investigation. Participants that missed many answers or answered randomly were excluded from further analyses. As a result, the final sample comprised 4790 participants. Participants' mean age (152 participants did not report their age) was 16.78 years ( $SD = 0.92$ ), with a range of 14 to 20 years. 2283 (47.7%) participants were boys, 2362 (49.3%) were girls, and 145 (3%) did not report their gender. Before formal investigation, we informed all students and their teachers of the research purpose and the voluntary nature of participation. The formal investigation was administrated in a classroom setting. Students were first required to complete their demographic information, and then asked to complete instruments assessing bullying victimization, shame, self-esteem, and social anxiety.

### 2.2 Measures

**Bullying Victimization** Bullying victimization was measured with the Delaware Bullying Victimization Scale-Student Chinese Revision (Xie et al. 2018). The original questionnaire was developed by Bear et al. (2011). We used the Chinese version revised by Xie et al. (2018) to ensure the instrument was suitable for Chinese students. The scale has a four-factor structure with 17 items covering verbal bullying (e.g., "Someone made hurtful jokes on me"), physical bullying (e.g., "I was deliberately pushed by others"), relational bullying (e.g., "Some students told or egged others not to be friends with me"), and cyberbullying (e.g., "Someone posted bad or hurtful information about me through social networking sites, such as Wechat, QQ, and Weibo"). The 13th item "I was bullied at this school" was used as a screening item and not included in the data analysis. Participants respond to the items using a 6-point Likert scale from 0 (never) to 5 (every day). A higher score indicates a higher level of bullying victimization. In the present study, the scale had good internal reliability ( $\alpha = 0.88$ ) and construct validity: chi-square values ( $\chi^2[82] = 2013.153$ , comparative fit index (CFI) = 0.94, Tucker-Lewis index (TLI) = 0.91, root mean square error of approximation (RMSEA) (90% confidence interval [CI]) = 0.07 (0.067–0.073), and standardized root-mean-square residual (SRMR) = 0.096.

**Social Anxiety** Social anxiety was measured with the Social Anxiety Scale developed by La Greca et al. (1988). The scale was originally used to measure children (La Greca et al. 1988), and researchers also used it to evaluate teenagers by rewording "other kids" to "peers," "others," or "people" (La Greca et al. 1988; Xin et al. 2004). In the present study, we used it to measure adolescents by rewording "other kids" to "peers." The scale has a two-factor structure with 10 items covering fear of negative evaluation

(e.g., “I am worried about being teased”), and social avoidance and distress (e.g., “I rarely talk when I am with my peers”). Participants respond to each item on a 4-point Likert scale from 0 (never) to 3 (always), with higher scores indicating a higher level of social anxiety. The scale had good internal reliability ( $\alpha = 0.85$ ) and construct validity:  $\chi^2(34) = 648.065$ , CFI = 0.96, TLI = 0.95, RMSEA (90% CI) = 0.061 (0.057–0.066), and SRMR = 0.032.

**Shame** Shame was measured with the Trauma Related Shame Inventory (Øktedalen et al. 2014). This 24-item scale has a two-factor structure and covers internal shame (e.g., “As a result of this experience, I have lost respect for myself”) and external shame (e.g., “If others knew what had happened to me, they would look down on me”). Participants respond to the items on a 4-point Likert scale from 0 (strongly disagree) to 3 (strongly agree), with higher scores indicating a higher level of shame. In the present study, the scale had good internal reliability ( $\alpha = 0.88$ ) and construct validity:  $\chi^2(225) = 4535.876$ , CFI = 0.95, TLI = 0.94, RMSEA (90% CI) = 0.063 (0.062–0.065), and SRMR = 0.035.

**Self-Esteem** Self-esteem was measured with the Self-Esteem Scale (SES) (Rosenberg 1989). The SES includes 10 items, such as “On the whole, I am satisfied with myself”. Participants respond to each item on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating a higher level of self-esteem. The Cronbach’s  $\alpha$  coefficient for this scale was 0.83 (Zhou et al. 2019). In the present study, the scale had good internal reliability ( $\alpha = 0.88$ ) and construct validity:  $\chi^2(33) = 827.183$ , CFI = 0.95, TLI = 0.93, RMSEA (90% CI) = 0.071 (0.067–0.075), and SRMR = 0.038.

### 2.3 Data Analysis Strategies

Means, standard deviations, and Pearson’s correlation coefficients were calculated to evaluate the levels of bullying victimization, social anxiety, shame, and self-esteem using SPSS 19.0. The internal reliability coefficients of scales were calculated by using SPSS 19.0, and confirmatory factor analysis was performed to examine the construct validity of scales by using Mplus 7.0. Structural equation modeling analyses were performed to examine the mediating role of shame and self-esteem using Mplus 7.0. Missing data were handled using maximum likelihood estimation (ML). We further conducted a two-step procedure to examine the chain mediating roles of shame and self-esteem in the association between bullying victimization and social anxiety. First, we built a direct effects model to assess the direct effect of bullying victimization on social anxiety. Second, based on the direct effects model, we inserted shame and self-esteem as mediators into the relation between bullying victimization and social anxiety to form a chain mediating effects model.

In the above model establishment process, we adopted several model indices that were frequently used to assess the model fit according to Wen et al. (2004):  $\chi^2$ , CFI, TLI, RMSEA, and SRMR. CFI and TLI values larger than 0.90, and RMSEA and SRMR values less than 0.08 indicate an acceptable model fit.

### 3 Results

#### 3.1 Descriptive Statistics and Correlations among Main Measures

Descriptive characteristics and correlations among all measures are displayed in Table 1. The mean levels of bullying victimization, shame, self-esteem, and social anxiety were 0.34, 0.90, 2.87, and 0.94, respectively. Furthermore, we found that gender was negatively associated with age, bullying victimization, shame, self-esteem, and was positively associated with social anxiety. Age showed no significant relation with other variables except for gender. Correlations between all other main variables were significant, indicating bullying victimization was significantly and positively associated with social anxiety and shame, and significantly negatively associated with self-esteem.

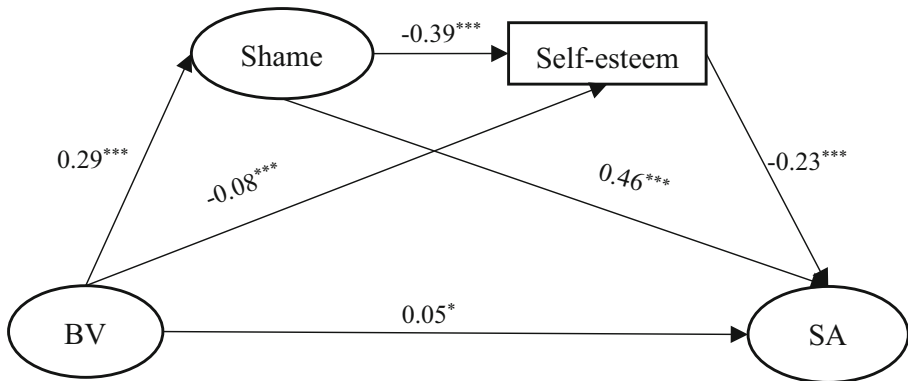
#### 3.2 Examining the Mediation Model

To test our hypotheses, we used a mediation model to examine whether shame and self-esteem mediated the relation between bullying victimization and social anxiety. First, the direct model showed a satisfactory model fit:  $\chi^2(8) = 286.252$ , CFI = 0.935, TLI = 0.879, RMSEA (90% CI) = 0.085 (0.077–0.094), and SRMR = 0.032. The results revealed that bullying victimization had a positive and significant effect on social anxiety ( $\beta = 0.205$ ,  $p < 0.001$ ). Next, based on the direct effects model, we added shame and self-esteem as mediators between bullying victimization and social anxiety after controlling for gender and age. The multiple indirect effects model also showed a good fit to the data:  $\chi^2(22) = 505.57$ , CFI = 0.972, TLI = 0.955, RMSEA (90% CI) = 0.068 (0.063–0.073), and SRMR = 0.03. As illustrated in Fig. 2, the mediating effects of shame and self-esteem between bullying victimization and social anxiety were both significant, and bullying victimization also influenced social anxiety through shame via self-esteem. Furthermore, we used bootstrapping to calculate the 95% confidence intervals (1000 resamples) to assess the significance of the indirect effects. A 95% confidence interval of an indirect path coefficient that does not include 0 is suggested to be significant. As shown in Table 2, for instance, the 95% confidence interval of the indirect path from bullying victimization to social anxiety via the shame (0.112–0.153) did not include 0, suggesting that the indirect path was significant.

**Table 1** Means, standard deviations, and correlations among main variables

	M ± SD	1	2	3	4	5	6
1. Gender	–	–					
2. Age	16.78 ± 0.92	–0.04**	–				
3. Bullying Victimization	0.34 ± 0.41	–0.17***	0.01	–			
4. Shame	0.90 ± 0.57	–0.06***	–0.01	0.27***	–		
5. Self-Esteem	2.87 ± 0.47	–0.14***	–0.02	–0.18***	–0.39***	–	
6. Social Anxiety	0.94 ± 0.44	0.09***	–0.01	0.18***	0.47***	–0.38***	–

Note. \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . Male students were coded as 1, and female were coded as 2



**Fig. 2** The mediating effects model after controlling for gender and age. BV = Bullying victimization, SA = Social anxiety. All coefficient estimates are completely standardized. \* $p < 0.05$ ; \*\*\* $p < 0.001$

## 4 Discussion

From a self-examination perspective, the present study examined the specific mechanisms of how bullying victimization affected adolescents' social anxiety through shame and self-esteem. The findings indicated that bullying victimization was significantly and positively associated with social anxiety, which supported  $H_1$  and was consistent with previous findings (Boulton 2013; Coelho and Romao 2018). Boulton (2013) proposed that experiences of bullying, especially relational bullying, could lead to social withdrawal or evasion. In addition, based on the chronic stress model (Dohrenwend and Dohrenwend 1981), bullying victimization experiences cause cumulative harm to individuals. In a short period of time, ridicule, teasing, and exclusion by others may induce negative emotions and painful experiences among adolescents. In the long-term, it may increase individuals' sense of loneliness and helplessness and decrease the sense of belongingness, which means victims may distrust others and be afraid to socialize, thereby leading to social anxiety (Boulton 2013). In addition, experiencing bullying victimization may increase adolescents' levels of anticipatory anxiety about being bullied again in socially interactional situations, which also increases the risk for social anxiety and withdrawal behaviors (Pontillo et al. 2019).

**Table 2** Bias-corrected bootstrap test on mediating effects

Effect	Paths	Effect value	Amount of effect	95% CI
Direct effect	BV → SA	0.05	22%	0.006–0.093
Indirect effect	BV → shame → SA	0.13	56%	0.112–0.153
	BV → self-esteem → SA	0.02	9%	0.008–0.028
	BV → shame → self-esteem → SA	0.03	13%	0.020–0.032
Total indirect effect		0.18	78%	0.153–0.200
Total effect		0.23	100%	0.178–0.273

*Note.* BV = Bullying victimization, SA = Social anxiety.



Consistent with these findings, we found bullying victimization was directly and positively associated with social anxiety.

#### 4.1 Mediating Roles of Shame and Self-Esteem

Our findings also showed that bullying victimization was positively associated with social anxiety through shame, which was consistent with  $H_{2a}$  and previous research (Ida et al. 2018; Irwin et al. 2016), and supported the shattered assumptions theory (Janoff-Bulman 2010). Experience of being repeatedly bullied may shatter victims' stable belief systems toward the self (Janoff-Bulman 2010), leading to negative attributions about such experiences. Victims tend to negatively interpret being bullied as their own fault, which may lead to condemnation and derogation of the self and an increased sense of shame (Ida et al. 2018; Øktedalen et al. 2014). Humiliation and negative evaluation from others also exacerbate victims' shame (Gilbert 1997), as these experiences make them feel unacceptable, disliked, and despised by others. To avoid these negative internal and external experiences, victims often develop restrained emotions such as fear and anxiety when facing interpersonal communication, and show restrained behaviors such as withdrawal and avoidance in socializing (Gilbert 2000).

Our results also indicated that self-esteem mediated the association between bullying victimization and social anxiety, which supported  $H_{2b}$ . This finding was consistent with previous studies, which found peer conflicts lowered adolescents' self-esteem, and low self-esteem further predicted a high level of social anxiety (Abdollahi and Abu Talib 2015; Låftman and Modin 2017). Physical, verbal, or relational victimization in school gradually harms students' self-efficacy in dealing with interpersonal relationships, and elicits a sense of inferiority and worthlessness (Singh and Bussey 2011), eventually resulting in low levels of self-esteem. Our finding also supports the anxiety-buffer hypothesis (Greenberg et al. 1992), which holds that self-esteem is a natural buffer against anxiety. People with low levels of self-esteem are more vulnerable to self-derogation, which reduces the elastic space provided by the self-regulation mechanism of self-esteem (Cheng et al. 2015). Since the protective role of self-esteem cannot be played, bullying victims cannot effectively get rid of and relieve their anxiety in social situations, resulting in high levels of social anxiety (Pan et al. 2018).

Importantly, our results showed that bullying victimization was positively associated with social anxiety through shame via self-esteem, which was consistent with  $H_3$ . Individuals with high levels of shame may intensely experience a "bad self," which heightens feelings of worthlessness and disgrace (Pineles et al. 2006) and is detrimental to their self-esteem. Previous studies also found that shame had a significant negative predictive effect on self-esteem, as people who were shame-prone had a more negative evaluation of self-worth and lower levels of self-acceptance than those who were not prone to shame (Greene and Britton 2013; Yelsma et al. 2002). According to Mitchell and Phillips (2007) and Macatee et al. (2017), emotional states can regulate individuals' cognition, and negative emotions may trigger negative attention bias. After being bullied, long-term negative emotional experiences (e.g., shame) elicit negative cognition and evaluation of the self, which decrease self-esteem. Therefore, victims' final social anxiety will in turn increase through shame via self-esteem.

## 4.2 Limitations and Implications

This study had some limitations. First, this study was cross-sectional, and our findings did not indicate any causal relations. The description of the predictive roles of the main variables was based on theoretical assumptions. The second limitation was that all measures were based on participant self-report. Further research could include other research methods, such as experiments or interviews, to enhance the reliability of the results. Third, this study only investigated senior high school students. Integrating junior high school students as participants will be helpful to comprehensively understand the above mechanisms.

Despite these limitations, this research explored the mechanisms of how bullying victimization elicits social anxiety from a perspective of internal self-examination, which has been largely ignored in previous studies. Our findings about school bullying also enriched the chronic stress model (Dohrenwend and Dohrenwend 1981), the shattered assumptions theory (Janoff-Bulman 2010), and the anxiety-buffer hypothesis (Greenberg et al. 1992) in the trauma field. For intervention practice, in addition to implementing urgent measures to protect victims after being bullied, schools need to pay more attention to relieving students' negative emotions towards their inner world, especially shame involving self-denial and self-criticism. For example, teachers can encourage the victims to self-disclose more by sharing or talking their encounters with psychological teachers and friends; by keeping a diary or painting pictures. At the same time, the victims can also do some relaxation exercise, such as relaxation training for abdominal breathing, and progressive muscle training. Moreover, teachers should guide students not to attribute bullying experiences to themselves, and help them to positively evaluate themselves and restore confidence. This will help students to avoid developing a low level of self-esteem and feelings of inferiority or worthlessness. Such strategies can be used to help relieve social anxiety among victims of bullying.

**Acknowledgments** This study was supported by Zhejiang Provincial Natural Science Foundation of China (Grant No. LQ20C090006). We thank the students and teachers of the participating schools for their time and support.

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## Compliance with Ethical Standards

**Conflict of Interest** The authors have no conflicts of interest to declare.

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