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## Moderating effects of personal strengths in the relationship between juvenile victimization and delinquent behaviors

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### ABSTRACT

**Background:** Robust evidence suggests a strong association between juvenile victimization and delinquency. Yet, there is a lack of research on the protective factors at the individual level that may buffer the relationship between victimization and delinquent behaviors.

**Objectives:** This study adopted a positive psychology perspective to examine the effects of three types of personal strength (self-regulation, interpersonal, and intellectual) on the relationship between different types of victimization and delinquency.

**Participants and Setting:** Data were collected from 631 Chinese migrant children (mean age = 10.52 ± 0.92 years) via convenience sampling.

**Methods:** Participants completed a self-reported questionnaire that assessed experiences of victimization in family, interpersonal, and community settings, involvement in delinquent behaviors, and personal strengths.

**Results:** The prevalence of different delinquent behaviors was significantly higher in the victimization groups than in the non-victimization groups. Regression analyses revealed that all three types of personal strength served as direct predictors of delinquency ( $B_{self-regulation} = -0.46$ ,  $SE_{self-regulation} = .09$ ,  $p < .001$ ;  $B_{interpersonal\ strength} = -0.23$ ,  $SE_{interpersonal\ strength} = .06$ ,  $p < .001$ ;  $B_{intellectual\ strength} = -0.19$ ,  $SE_{intellectual\ strength} = .05$ ,  $p < .001$ ), while self-regulation further moderated the victimization-delinquency relationship. When self-regulation was high, the association between victimization and delinquency was significantly weaker than when self-regulation was low.

**Conclusions:** Our findings suggest that personal strengths are important protective factors for youth exposed to experiences of victimization. Identifying methods to help victims recognize, develop, and use their personal strengths should be integral to support and intervention efforts for young victims.

### 1. Introduction

Juvenile victimization refers to a wide spectrum of experiences, including conventional crimes, child maltreatment, sexual abuse, violence by peers and siblings, and witnessing violence (Finkelhor, 2011). An alarmingly high prevalence of victimization among youth has been reported worldwide according to national survey data. One study reveals that 87% of children in the U.S. have experienced some form of victimization in their lifetime, and another that 38.7% of children in the U.K. had experienced more than one type of direct victimization in the year preceding the study (Finkelhor, Turner, Ormrod, & Hamby, 2009; Radford, Corral,

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Bradley, & Fisher, 2013). In China, 71% of urban adolescents were found to have experienced at least one form of victimization in their lifetime and 14% reported experiences of multiple forms of victimization (i.e., poly-victimization) (Chan, 2013). These findings suggest that juvenile victimization has become a serious social problem worldwide.

From an ecological perspective (Bronfenbrenner, 1994), juvenile victimization can be categorized into different types in terms of the context in which it occurs (Finkelhor, Turner, & Ormrod, 2006). Such categorization is essential for researchers and practitioners to better understand the risks and protective factors in multiple contexts, and the impact of different types of victimization on children's health. Victimization at the microsystem level (i.e., the direct setting where the child is embedded, such as within the family or at school) has the most direct and severe influence on children's physical and psychological health (Bowen & Bowen, 1999), while community victimization at the mesosystem level (i.e., relationships among microsystems) has a relatively moderate impact on children but may contribute to victimization in the microsystem (Cicchetti & Lynch, 1993). For this reason, studying victimization of different kinds based on a holistic approach has been increasingly advocated.

### 1.1. *Victimization and delinquency*

Victimization has been linked to a long list of adverse outcomes, such as negative emotions, mental health problems, loneliness, and social isolation (e.g., Finkelhor, 2011). One commonly reported finding is the strong association between victimization and delinquency (Jennings, Piquero, & Reingle, 2012; Silver, Piquero, Jennings, Piquero, & Leiber, 2011). This seems to suggest that children who are victimized are themselves more likely to become bullies, perpetrators of violence, and even criminals. The association between victimization and delinquency may be explained by a common constellation of characteristics, such as high impulsivity and low social control (Jennings et al., 2012; Piggott et al., 2018). Routine activity theory suggests that risky lifestyles adopted by youth could be another common factor (Felson, 1994; Smith, Frazee, & Davison, 2000). Specifically, delinquency increases youths' chances of being victimized because of increased proximity to delinquent peers (Cho & Wooldredge, 2016), possible retaliation caused by their provocative behaviors toward others (Kivivuori, Savolainen, & Aaltonen, 2016), frequent exposure to dangerous situations, and the loss of protection from adults due to their offensive behaviors (Cuevas, Finkelhor, Turner, & Ormrod, 2007).

Proposed by Agnew (1992), general strain theory (GST) has often been adopted as a theoretical framework for understanding the effect of experiences of victimization on the development of delinquent behaviors. According to GST, strain is defined as "relationships in which others are not treating the individual as he or she would like to be treated" (Agnew, 1992, p. 48). This produces negative emotions, especially anger and depression, which in turn lead to deviant behaviors. Strained adolescents engage in delinquent behaviors in an attempt to prevent, release, or manage the strain and negative emotions they feel. Delinquency thus represents a maladaptive and unhealthy response to or coping strategy for strain.

Extended GST (Agnew, 2001) further posits that strain is more likely to lead to delinquency when it is seen as unjust, high in magnitude and severity, and associated with low social control. This type of strain (e.g., juvenile victimization) tends to foster strong negative emotions, influence one's ability to address strain in a non-deviant way, and be related to a lack of attachment to significant others and social support. A range of conditioning factors (Agnew, 2010) that may moderate the relationship between victimization and delinquency have been proposed (e.g., coping skills and resources, personal attributes such as self-control, and conventional and criminal social support). These factors not only influence the way victimized individuals perceive and feel about their experiences, but directly affect their choice of coping strategies, as well as their ability to engage in these strategies (Bao, Haas, & Pi, 2007).

Based on extended GST, recent studies have focused on protective factors at the interpersonal and social levels that may buffer the relationship between victimization and delinquency, such as family functioning (O'Brien & Bera, 1986), emotional bonding with parents (Hay & Evans, 2006), commitment to school (Jenkins, 1995), and teacher-student relationships (Lo, Cheng, Bohm, & Zhong, 2018). However, protective factors at the individual level such as adaptive coping (Carver & Connor-Smith, 2010; Seery, 2011) and other personal strengths have been largely understudied.

### 1.2. *Personal strengths as protective factors*

Concerning the development of positive psychology, we can pay more attention to positive attributes, traits, and experiences, and their roles in promoting quality of life and preventing problem behaviors. In particular, positive psychologists have studied personal strengths, defined as positive characteristics manifested in one's thoughts, feelings, and behaviors which enable individuals to thrive (Ho et al., 2016; McGrath, 2015; Park & Peterson, 2010; Peterson & Seligman, 2004). One key feature of personal strengths is that they determine "how an individual copes with adversity" (Peterson & Seligman, 2004, p. 17). This suggests that personal strengths may function as important resources that help improve one's coping and reduce the negative consequences of strain or experiences of victimization (Harzer & Ruch, 2015).

While personal strengths have been conceptualized in terms of different dimensions, a three-dimensional model encompassing interpersonal, intellectual, and self-regulation strengths has been found to be the most stable in studies using different populations, including Chinese samples (Duan et al., 2012). Interpersonal strength reflects "the love, concern, and gratitude of a person toward others" (Duan & Ho, 2017, p. 234, p. 234); it is devoted to maintaining agreeable relationships with other people. Intellectual strength refers to "the curiosity and zest for creativity of an individual that are reflected by inquisitiveness and vitality" (Duan & Bu, 2017, p. 2520); it links the individual to the outside world. Self-regulation or temperance strength denotes an intrapersonal strength involving the ability both to persist in order to achieve goals and to exhibit self-control (McGrath, 2015).

All three types of strength are found to be associated with positive coping (Low & Espelage, 2014; Turanovic & Pratt, 2013). It has

been reported that individuals with higher levels of self-regulation are more able to tolerate the pressure created by victimization and more likely to choose not to seek immediately gratifying forms of coping (e.g., revenge on the victimizer) (Turanovic, 2011). Park and Peterson (2009) have reported that intellectual strengths enable the individual to expand and construct repertoires of thought and action that promote coping strategies. Meanwhile, related to interaction and contact with others, interpersonal strength has been associated with social support coping because individuals with this strength tend to have good social networks and more additional resources from which to obtain help, guidance, and support regarding coping in situations of strain (Alvord & Grados, 2005; Lavy & Littman-Ovadia, 2011). Thus, it seems reasonable to assume that individuals with higher levels of personal strengths are less likely to engage in delinquent behaviors as a way of coping with victimization than those lacking in such strengths. By enabling youth to choose more constructive strategies to deal with stress and related negative emotions, personal strengths may lead to better outcomes following exposure to victimization (Gustems-Carnicer & Calderón, 2016). However, the role of personal strengths in the relationship between victimization and delinquency has hardly been investigated. It remains unclear whether personal strengths contribute to a reduced likelihood of involvement in delinquent behaviors among adolescents who are exposed to experiences of victimization.

### 1.3. *Victimization and delinquency in chinese internal migrant children*

There has been a massive internal migration of rural workers to cities in China in the past few decades, which has resulted in a large number of school-aged rural children migrating with their families (Jordan, Ren, & Falkingham, 2014). These migrant children are at a high risk of both being victimized and developing delinquent behaviors due to their limited resources for maintaining psychological health (Hill, Kaplan, French, & Johnson, 2010), the economic and acculturation stress experienced by their families (Li & Vazquez-Nuttall, 2009), status-based prejudice, and possible unjust treatment by peers and urban citizens (Chen et al., 2011; Cheung, 2013). However, empirical findings on the prevalence of child victimization and delinquent behaviors in this group of children have been inconsistent (Chen & Zhong, 2013; Chen, Sun, Xie, Li, & Chan, 2016; Li & Vazquez-Nuttall, 2009; Liu & Liu, 2016). Research has revealed that migrant children also possess a number of personal strengths that contribute to their positive development and protect them from various problems (Potochnick & Perreira, 2010; Su, Li, Lin, & Zhu, 2017). Nevertheless, no study has addressed the potential protective role of personal strengths in the relationship between victimization and delinquency in this population.

### 1.4. *The present study*

Against the above background, the present study first aims to examine the association between experiences of victimization and delinquent behaviors based on a sample of Chinese internal migrant children (McKenney, Pepler, Craig, & Connolly, 2006). The focus is on three major forms of juvenile victimization that occur in different ecological contexts: 1) family victimization (FV), including both child maltreatment and witnessing violence within the family; 2) interpersonal victimization (PV), referring to experiences of victimization among peers and siblings in the interpersonal domain; and 3), community victimization (CV), representing conventional crime. In terms of the characteristics of the three forms of experiences of victimization, FV should have the greatest magnitude, be perceived as most unjust, and most severely affect the child's association with social control because parents or caregivers are the perpetrators (Agnew, 2010). On the other hand, CV may have the lowest magnitude, be perceived by the child as relatively less unjust, and have less direct influence on one's association with social control (Sampson, Raudenbush, & Earls, 1997). As such, it is hypothesized that: 1) all three forms of victimization are positively associated with the occurrence of delinquent behaviors, and 2) the effect of FV (violence) on adolescent delinquent behaviors is the strongest, followed by PV (peer and sibling victimization) and CV (conventional crime).

Second, the role of personal strengths in the association between juvenile victimization and delinquent behaviors will be investigated. We aim to examine both the direct effects of the three types of strength on delinquency and the moderating effects of personal strengths on the relationships between different forms of victimization and delinquent behaviors.

## 2. Method

### 2.1. *Participants*

The present study is part of a project focused on promoting the psychosocial development of rural-to-urban migrant children in Shanghai and Hangzhou, whose migrant populations are among the largest in the country (Feng, Zuo, & Ruan, 2002; Yue, Liu, & Fan, 2013). The project has offered annual resilience-building summer camps designed and implemented by university students in Hong Kong to children of migrant workers in the two cities. Collaborating with local educational bureaus, universities, and NGOs, the project has run for five consecutive years, and all the participants have been primary school students. The present study was based on data collected using a survey at the beginning of the 2017 summer camp using convenience sampling. A total of 631 children aged between 8 and 13 years (mean age = 10.52 ± 0.92 years) participated in the survey, with a response rate of 89.3%. Demographic characteristics of participants are summarized in Table 1.

### 2.2. *Procedure*

Ethical approval was granted by the Human Subjects Ethics Sub-committee of the authors' university. Written consent was obtained from participating children's school principals and parents before the study began. Only children with parental consent were

**Table 1**  
Demographic Characteristics of Participants by Gender<sup>a</sup>.

	Total (n = 631)		Female (n = 335)		Male (n = 287)		$\chi^2$
<sup>b</sup> Age (years)	10.52	(0.92)	10.43	0.95	10.64	0.87	<sup>c</sup> 5.39**
FHE							0.32
Primary school or lower	66	(10.8%)	36	(11%)	30	(10.8%)	
Secondary school	259	(42.3%)	136	(41.5%)	122	(43.7%)	
College or above	177	(28.9%)	96	(29.3%)	78	(28.0%)	
Do not know	110	(18.0%)	60	(18.3%)	49	(17.6%)	
MHE							0.83
Primary school or lower	88	(14.3%)	45	(13.6%)	41	(14.7%)	
Secondary school	255	(41.4%)	137	(41.4%)	118	(42.1%)	
College or above	158	(25.6%)	83	(25.1%)	73	(26.1%)	
Do not know	115	(18.7%)	66	(19.9%)	48	(17.1%)	
PMS							0.95
Intact	546	(89.1%)	289	(87.8%)	252	(90.3%)	
Non-intact	67	(10.9%)	40	(12.2%)	27	(9.7%)	
Sibling status							2.69
No siblings	204	(34.9%)	104	(33.2%)	98	(36.7%)	
One sibling	239	(40.9%)	137	(43.8%)	99	(37.1%)	
Two or more siblings	142	(24.3%)	72	(23.0%)	70	(26.2%)	

Note: FHE = father's highest education level; MHE = mother's highest education level; PMS = parental marital status.

<sup>\*</sup> $p < .05$ , <sup>\*\*</sup> $p < .01$ , <sup>\*\*\*</sup> $p < .001$ .

Percentage are calculated based on valid cases.

<sup>a</sup> Data are presented as number of cases (percentage) unless otherwise indicated.

<sup>b</sup> Data are presented as mean (SD) of each group.

<sup>c</sup>  $t$  statistics are presented.

invited to sign a consent form if they agreed to participate in the survey. Participation was completely voluntary. Participants were free to withdraw their participation at any time. A pilot study was conducted with ten primary school students in Grade 4 to ensure that the children were able to complete the questionnaire by themselves and had no difficulty understanding the items.

From June through July 2017, a paper-and-pencil survey was conducted at both Hangzhou and Shanghai. Participants completed the self-reported questionnaire in classroom settings without the presence of teachers from their own schools. The survey was administered by the first author and three experienced researchers. The researchers read out the questionnaire instructions to the participants and provided support when needed during the survey. Participants were assured that their responses would be kept confidential and analyzed in an aggregated manner for research use only. All questionnaires were collected immediately after the survey by the researchers without being seen by any school personnel. Students responded to the questionnaire anonymously, rendering cases with positive reports of victimization experiences unidentifiable.

## 2.3. Measures

### 2.3.1. Chinese version of the juvenile victimization questionnaire (JVQ)

The 34-item JVQ, designed to comprehensively measure juvenile victimization, comprises five modules: conventional crime (CC: 8 items), witnessing and indirect victimization among children and youth (WIV: 9 items), child maltreatment (CM: 4 items), peer and sibling victimization (PSV: 6 items), and sexual victimization (SV: 7 items). Participants respond to each item on a 3-point rating scale (0 = no experience of the specific violence; 1 = experience of the specific violence in the preceding year; and 2 = experience of the specific violence before the preceding year). An example item (robbery) for conventional crime reads, "Did anyone use force to take something away from you that you were carrying or wearing?" Previous studies have shown that the JVQ has good psychometric properties and is associated with both psychological and physical health outcomes. The Chinese version of the JVQ was developed by the second author (Chan, Fong, Yan, Chow, & Ip, 2011) and has been validated in different youth samples in mainland China and Hong Kong (Chan, Yan, Brownridge, & Ip, 2013). For a representative sample of Hong Kong adolescents, Chan et al. (2011) reported that all subscales of the Chinese JVQ showed good internal consistency; participants with higher scores on the Chinese JVQ reported more physical health problems and psychological distress. These findings provide empirical support for the psychometric properties of the Chinese JVQ. In the present study, to examine participants' experiences of victimization in three ecological domains (i.e., family, interpersonal, and community), two items from the WIV module ("witness to domestic violence" and "witness to parent assault of sibling") and the entirety of the CM module were used as indicators of FV, and the CC and PSV modules were used to reflect CV and PV, respectively. The preceding year prevalence of each domain of victimization (i.e., FV, CV, and PV) was calculated in terms of the percentage of participants who responded "1" to any of the items in the domain. Scale score was computed as the number of responses of "1" to the scale items. As shown in Table 2, the three subscales were moderately correlated and the correlation coefficients ranged between .42 and .62. The Cronbach's alpha coefficients were .69 (FV), .80 (CV), and .79 (PV) based on the present sample.

**Table 2**  
Means, Standard Deviations, and Correlation Coefficients of Victimization, Delinquency, and Personal Strength.

	Mean (SD)	Range	FV	PV	CV	SR	Inter	Intel
FV	0.93 (1.31)	0–6	–					
PV	1.07 (1.51)	0–6	.62	–				
CV	2.13 (2.06)	0–7	.42	.48	–			
SR	5.49 (1.22)	1–7	–.23	–.19	–.13	–		
Inter	5.87 (1.31)	1–7	–.24	–.17	–.15	.72	–	
Intel	5.79 (1.39)	1–7	–.22	–.15	–.15	.67	.84	–
Delinq	0.81 (1.57)	0–12	.39	.35	.31	–.28	–.24	–.22

Note: FV = family victimization; PV = interpersonal victimization; CV = community victimization; SR = self-regulation strength; Inter = interpersonal strength; Intel = intellectual strength; Delinq = overall delinquency. All correlation coefficients were significant at  $p < .001$ .

### 2.3.2. Brief strengths scale

The 12-item Brief Strengths Scale (BSS) (Ho et al., 2016) was designed to measure three dimensions of personal strength: temperance (4 items), intellectual (4 items), and interpersonal (4 items). Several empirical studies with different Chinese samples have provided evidence of the good psychometric properties of the scale (Duan & Ho, 2017; Duan et al., 2012). In the present study, to measure strength specifically in relation to self-regulation, a minor adaptation was made to the temperance scale: the addition of two items of self-control. No change was made to interpersonal and intellectual strength scales. All items were rated on a 7-point Likert scale (1 = strongly disagree; 4 = neutral; 7 = strongly agree). A scale score was calculated as the average score of all items, with a high score representing a high level of personal strength. The adapted BSS had good internal consistency for the present sample of migrant children. The Cronbach's alpha coefficients for the three subscales were: 0.78 (self-regulation), 0.86 (interpersonal strength), and 0.89 (intellectual strength).

### 2.3.3. Delinquency scale

To measure participants' delinquent behaviors in the past year, the 12-item Delinquency Scale (DS) (Shek, 2005) was adopted. Adolescents indicated how frequently they had engaged in different types of delinquent behaviors, including status offenses (e.g., truancy, running away), minor offenses (e.g., cheating, speaking foul language), property offenses (e.g., theft, vandalism), and violent behavior (e.g., assault, gang fight, threatening) during the preceding year, giving their responses on a 6-point scale (0 = never; 1 = 1–2 times; 2 = 3–4 times; 3 = 5–6 times; 4 = 7–8 times; 5 = 9–10 times; 6 = more than 10 times). In the present study, the data were severely skewed as a large majority of the participants had never displayed the behaviors described in most items. We were also more interested in whether the participants displayed different delinquent behaviors than the frequency of each behavior. Therefore, scores on each item were recoded into dichotomous variables (i.e., 0 = never; 1 = at least once). The prevalence of different delinquent behaviors was computed as the percentage of participants who had displayed the behavior at least once in the past year (i.e., those who scored 1 on the item). A composite score representing respondents' overall delinquency was calculated as the total score of the recoded variables and was used as the outcome variable when examining the relationships among victimization, personal strengths, and delinquency. Meanwhile, the composite score was further recoded into a categorical variable (0 = none; 1 = at least one type) for estimation of the prevalence of overall delinquency in the preceding year.

## 2.4. Data analysis

First, preceding-year prevalence of victimization and delinquent behaviors was computed based on the whole sample and by gender. Consistent with previous studies, respondents were categorized as having been exposed to the specific domain of victimization if they had experienced any of the listed events in the preceding year. Similarly, the prevalence of delinquent behaviors was based on the percentage of participants who reported engaging in the behavior at least once in the preceding year. Second, Pearson's chi-square tests were performed to compare the occurrence rates of delinquent behaviors in children with and without different types of victimization. Third, to examine the moderating effects of personal strengths (i.e., self-regulation, interpersonal strength, and intellectual strength) on the relationship between victimization and delinquent behavior, multiple regression analyses were conducted using SPSS PROCESS 2.0 software. To quantify experiences of victimization, the JVQ items were first recoded into dichotomous variables (0 = never; 1 = at least once) and then victimization in each domain (i.e., family, interpersonal, and community) was calculated as the sum of the scores for the related item. For each regression model, the composite delinquency score of the participant served as the dependent variable, victimization in a specific domain (i.e., family, interpersonal, or community) served as the predictor, and one personal strength (i.e., self-regulation, intellectual strength, or interpersonal strength) served as the moderator. Socio-demographic variables that have been demonstrated to affect delinquency in previous studies were controlled in the regression models, including age, gender (0 = male; 1 = female), highest paternal and maternal educational level (ranged from 0 = no formal education to 7 = university or above), and sibling status (0 = no siblings; 1 = one or more siblings).

**Table 3**  
Preceding Year Prevalence of Victimization and Delinquent Behaviors by Gender.

	Total (n = 631)	Female (n = 335)	Male (n = 287)	$\chi^2$
Community victimization (CV)	68.4%	69.1%	67.5%	0.18
Robbery	29.4%	28.5%	30.5%	0.30
Personal theft	52.3%	55.9%	48.9%	2.94
Vandalism	42.7%	41.9%	43.0%	0.08
Assault with weapons	26.2%	22.8%	29.8%	3.91
Assault without weapons	32.2%	30.5%	34.2%	0.92
Attempted assault	24.0%	21.2%	26.6%	2.47
Kidnapping	4.0%	5.1%	2.8%	2.10
Bias attack	7.8%	9.0%	6.6%	1.16
Interpersonal victimization (PV)	47.1%	44.2%	51.0%	2.92
Gang or group assault	19.4%	14.4%	25.3%	7.28 <sup>*</sup>
Peer or sibling assault	30.4%	27.2%	34.2%	3.45
Non-sexual genital assault	14.6%	9.6%	19.9%	13.20 <sup>***</sup>
Bullying	18.2%	15.2%	21.3%	3.89
Emotional bullying	22.2%	21.6%	23.1%	0.19
Dating violence	3.2%	1.8%	4.9%	4.74 <sup>†</sup>
Family victimization (FV)	46.5%	44.5%	48.9%	1.18
Physical abuse by caregiver	21.4%	17.3%	26.2%	7.28 <sup>**</sup>
Psychological/emotional abuse	24.9%	25.0%	24.7%	0.01
Neglect	11.0%	9.0%	13.3%	2.92
Custodial interference/family abduction	5.2%	4.2%	6.3%	1.42
Witness to domestic violence	14.3%	13.1%	15.7%	0.82
Witness to parent assault of sibling	18.8%	19.5%	17.4%	0.45
Delinquent behavior	37.8%	33.1%	42.8%	5.99 <sup>†</sup>
Stealing	5.0%	2.7%	7.8%	8.18 <sup>*</sup>
Cheating	19.3%	17.4%	21.8%	1.91
Truancy	1.1%	0.3%	2.1%	4.49
Runaway	2.4%	1.2%	3.9%	4.61 <sup>†</sup>
Vandalism	4.2%	2.4%	6.3%	5.80 <sup>*</sup>
Assault	5.7%	3.3%	8.5%	7.55 <sup>**</sup>
Sexual behavior	5.2%	3.0%	7.4%	6.15 <sup>*</sup>
Gang violence	3.5%	1.2%	6.4%	11.77 <sup>**</sup>
Foul language	27.0%	20.5%	34.0%	14.16 <sup>***</sup>
Staying out overnight	2.1%	1.5%	2.8%	1.32
Threatening or doing violence to others	4.4%	3.3%	5.7%	1.97
Trespassing	2.6%	1.2%	4.2%	5.59 <sup>†</sup>

Note. Community victimization = conventional crime (CC) of JVQ; interpersonal victimization = peer and sibling victimization (PSV) of JVQ; family victimization = child maltreatment (CM) and two items of witness and indirect victimization (WIV) of JVQ; delinquent behavior = overall delinquency (at least once for any of the listed behaviors).

\*  $p < .05$ .

\*\*  $p < .01$ .

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

### 3. Results

#### 3.1. Preceding-year prevalence of juvenile victimization and delinquent behaviors

Table 3 shows the preceding-year prevalence of juvenile victimization in different domains. The most prevalent form of victimization among the migrant children sample was CV or conventional crime (68.4%), with personal theft (52.3%) being the most commonly reported experience, followed by vandalism (42.7%) and assault without weapons (32.2%). The next most prevalent was PV, reported by 47.1% of the participants; peer or sibling assault was the most frequently reported PV (30.4%). FV, including both child maltreatment and witnessing violence within the family, was reported by 46.5% of the participants. In particular, 24.9% of the children reported experiences of psychological/emotional abuse and 21.4% reported being physically abused by caregivers. With regard to gender difference, males were more likely than females to experience “non-sexual genital assault” ( $\chi^2 = 13.20, p < .001$ ), “gang or group assault” ( $\chi^2 = 7.28, p < .01$ ), and “physical abuse by caregivers” ( $\chi^2 = 7.28, p < .01$ ). No gender difference was found in the prevalence of other experiences of victimization.

Table 3 also shows the prevalence of different types of delinquent behaviors. Speaking foul language (27.0%), cheating (19.3%), and assault (5.7%) were the top three most prevalent behaviors, and the least prevalent were truancy (1.1%), staying out overnight (2.1%), and running away from home (2.4%). At least one delinquent behavior in the preceding year was reported by 37.8% of the participants. Males showed a higher risk of most delinquent behaviors (8 out of 12) than did females, with the exception of cheating, truancy, staying out overnight, and threatening or doing violence to others.

**Table 4**  
Prevalence of Delinquent Behaviors in Participants with and without Experiences of Victimization in the Preceding Year.

Delinquent behaviors	FV	Non-FV	$\chi^2$	PV	Non-PV	$\chi^2$	CV	Non-CV	$\chi^2$
1. Stealing	8.4%	1.8%	14.04***	9.3%	1.2%	21.05***	7.1%	1.1%	9.57**
2. Cheating	26.6%	12.3%	20.29***	28.1%	11.2%	28.31***	24.1%	8.9%	19.55***
3. Truancy	2.1%	0.3%	4.32*	2.1%	0.3%	4.26*	1.7%	0	3.31
4. Runaway	3.1%	1.5%	1.77	4.1%	0.9%	6.71*	2.9%	1.0%	2.04
5. Vandalism	8.8%	0.3%	26.75***	7.6%	1.2%	15.55***	5.4%	1.6%	4.71*
6. Assault	9.2%	2.8%	11.47**	9.3%	2.4%	13.75***	8.1%	1.0%	11.69**
7. Sexual behavior	9.4%	1.5%	19.22***	8.2%	2.4%	10.67**	6.1%	2.6%	3.31
8. Gang violence	5.9%	0.9%	12.06**	6.2%	1.2%	10.99**	4.2%	1.0%	4.14*
9. Foul language	38.5%	16.7%	36.44***	36.1%	18.7%	23.59***	32.4%	16.2%	17.07***
10. Staying out overnight	3.5%	0.6%	6.65*	3.4%	0.9%	4.77*	3.2%	0	6.19**
11. Threatening or doing violence to others	7.8%	1.5%	13.92***	6.9%	2.1%	8.46**	6.4%	0	12.79***
12. Trespassing	4.6%	0.9%	7.91**	3.8%	1.5%	3.14	3.2%	1.6%	1.31
Delinquency	53.0%	23.7%	55.04***	52.6%	24.5%	51.19***	46.0%	20.2%	36.29***

Note: FV = family victimization; PV = interpersonal victimization; CV = community victimization; delinquency = overall delinquency in the preceding year.

\*  $p < .05$ .

\*\*  $p < .01$ .

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

### 3.2. Prevalence of character strengths

The means and standard deviations for the three personal strength scores are summarized in Table 2. The means of all subscale scores are above the midpoint (“4 = neutral”). The data suggest that the majority of the participants believed that they possessed these strengths. Relatively speaking, participants scored highest on interpersonal strength and lowest on self-regulation. This is consistent with previous findings showing that self-regulation is more common in adults than youths, as this strength requires maturity to be displayed (Park & Peterson, 2010).

### 3.3. Relationship between juvenile victimization and delinquent behaviors

Table 4 shows that the prevalence of different delinquent behaviors was significantly higher in the victimization groups than in the non-victimization groups. Specifically, FV and PV were associated with 11 out of 12 delinquent behaviors examined; CV was related to eight delinquent behaviors. The prevalence of overall delinquency (i.e., displaying any of the 12 delinquent behaviors) was also significantly higher in all three victimization groups than in their non-victimized counterparts.

### 3.4. Moderating effects of personal strengths on the prediction of delinquent behaviors by juvenile victimization

The means and standard deviations of victimization, personal strengths, and delinquency, as well as their simple correlation coefficients are summarized in Table 2. All correlations were significant and in the expected directions. Table 5 shows the results of the regression analyses. Nine regression models were estimated, testing the moderating effects of personal strengths on the relationships between the three domains of victimization experience (Models 1–3: CV; Models 4–6: PV; Models 7–9: FV) and delinquency, after controlling for the effects of demographic variables. The results are summarized in Table 5.

It was found that self-regulation served as both a direct predictor of delinquency ( $B = -0.46$ ,  $SE = .09$ ,  $p < .001$ ) and a moderator for the effects of all three types of victimization on delinquency, although the conditional effects of self-regulation differed across the three domains. It appears that self-regulation affected the influence of victimization at the community level on delinquency to a greater extent than in the interpersonal and family domains. Further analyses (Fig. 1) showed that while CV significantly predicted delinquency ( $B_{cv} = 0.31$ ,  $SE = .07$ ,  $p < .001$ ) when self-regulation was low (i.e., one standard deviation below the mean), this predictive effect became insignificant ( $B_{cv} = 0.08$ ,  $SE = .05$ ,  $p > .05$ ) when self-regulation was high (i.e., one standard deviation above the mean). Similarly, when self-regulation was high, the effects of PV ( $B_{pv} = 0.16$ ,  $SE = .07$ ,  $p < .05$ ) and FV ( $B_{fv} = 0.22$ ,  $SE = .08$ ,  $p < .01$ ) on delinquency were significantly lower than their effects on delinquency ( $B_{pv} = 0.45$ ,  $SE = .12$ ,  $p < .001$ ;  $B_{fv} = 0.59$ ,  $SE = .06$ ,  $p < .001$ ) when self-regulation was low.

Second, while interpersonal strength was found to negatively and significantly predict delinquency ( $B = -.23$ ;  $SE = .06$ ,  $p < .001$ ), its moderating effects were insignificant for all three types of victimization. Similar results were obtained for intellectual strength, which negatively predicted delinquency ( $B = -.19$ ;  $SE = .05$ ,  $p < .001$ ) while its moderating effect was insignificant for all three types of juvenile victimization. In other words, children who had a higher level of interpersonal or intellectual strength displayed fewer delinquent behaviors than those with lower levels of strengths, but the positive effects of experiences of victimization on delinquency were not significantly affected by one’s possession of either interpersonal or intellectual strengths.

**Table 5**  
Regression Analyses on the Moderating Effect of Personal Strengths on the Relationship between Victimization and Delinquency.

Predictors	Model 1 CV-SR	Model 2 CV-Inter	Model 3 CV-Intel	Model 4 PV-SR	Model 5 PV-Inter	Model 6 PV-Intel	Model 7 FV-SR	Model 8 FV-Inter	Model 9 FV-Intel
Age	.04 (.07)	.08 (.07)	.07 (.07)	.10 (.07)	.14 (.07)	.13 (.07)	.09 (.07)	.12 (.07)	.11 (.07)
Gender	-.39*** (.12)	-.41*** (.12)	-.47*** (.13)	-.22 (.11)	-.29* (.12)	-.36* (.12)	-.29* (.13)	-.39** (.13)	-.45*** (.13)
FHE	-.04 (.05)	-.02 (.05)	-.02 (.06)	-.04 (.05)	-.03 (.05)	-.03 (.06)	-.04 (.06)	-.02 (.05)	-.01 (.05)
MHE	-.01 (.05)	-.04 (.05)	-.05 (.06)	.00 (.05)	-.02 (.05)	-.03 (.06)	.02 (.05)	-.01 (.05)	-.02 (.05)
Sibling	.18 (.14)	.18 (.13)	.18 (.13)	.11 (.13)	.12 (.13)	.11 (.13)	.07 (.13)	.10 (.13)	.11 (.13)
CV	.20*** (.03)	.20*** (.04)	.21*** (.04)						
SR	-.46*** (.09)								
SR x CV	-.14* (.06)								
Inter		-.23*** (.06)							
Inter x CV		-.02 (.03)							
Intel			-.19*** (.05)						
Intel x CV			-.01 (.03)						
PV				.30*** (.07)	.32*** (.07)	.35*** (.08)			
SR				-.40*** (.08)					
SR x PV				-.17*** (.10)					
Inter					-.22*** (.06)				
Inter x PV					-.03 (.07)				
Intel						-.19*** (.06)			
Intel x PV						.03 (.07)			
FV							.41*** (.05)	.42*** (.05)	.46*** (.05)
SR							-.35*** (.08)		
SR x FV							-.22*** (.06)		
Inter								-.17** (.05)	
Inter x FV								-.05 (.03)	
Intel									-.15** (.05)
Intel x FV									.02 (.03)
R <sup>2</sup>	.20***	.16***	.16***	.22***	.18***	.19***	.26***	.21***	.21***

Note: FHE = father’s highest education level; MHE = mother’s highest education level; SR = self-regulation; CV = community victimization; FV = family victimization; PV = interpersonal victimization.

Gender: 0 = male, 1 = female; Sibling: 0 = no siblings, 1 = having at least one sibling.

Predictors and moderators are centered; values presented in the table are unstandardized regression coefficients (standard errors).

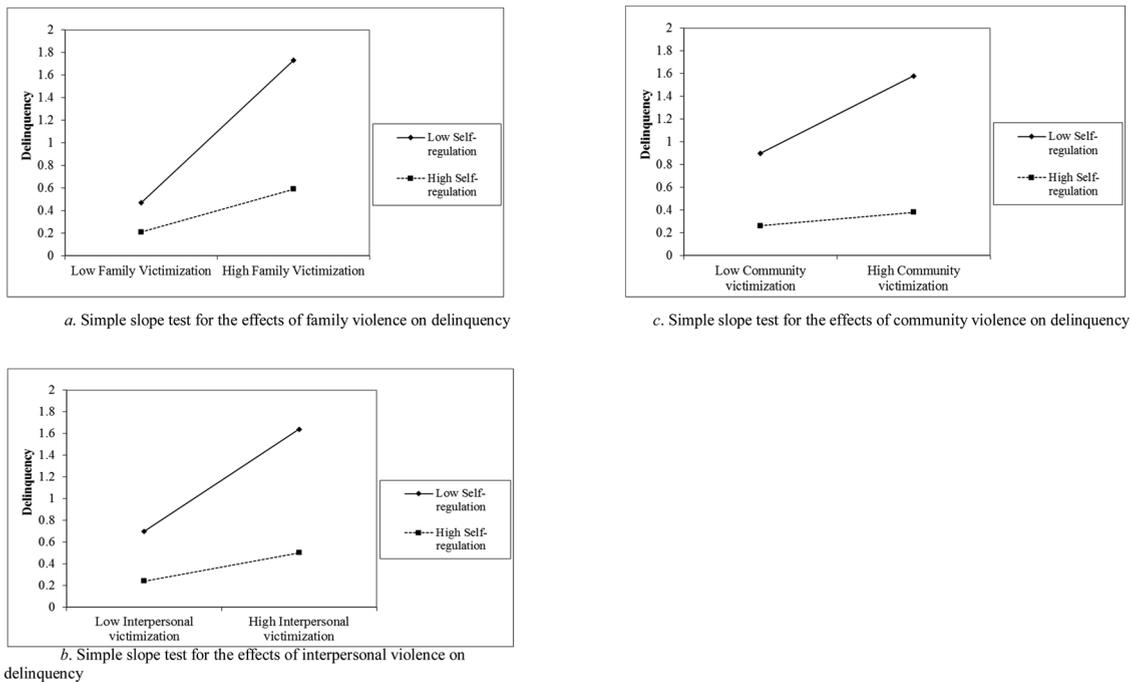
- \*  $p < .05$ .
- \*\*  $p < .01$ .
- \*\*\*  $p < .001$ .

#### 4. Discussion

The present study represents a preliminary attempt to examine the associations of three different forms of juvenile victimization with delinquent behaviors and the role of youths’ personal strengths in such relationships based on a sample of Chinese migrant children. Our results reveal a high prevalence of different experiences of victimization among Chinese migrant children: 68.4% of the participants reported that they had experienced CV in the preceding year, 47.1% had experienced PV, and 46.5% had experienced FV. These figures are higher than those reported based on the general population of Chinese youth, which are 43.1%, 21.7%, and 25.3%, respectively (Chan, 2013; Chan et al., 2013). The findings are in line with previous observations that migrant children are at high risk of being victimized due to discrimination, family economic difficulties, and various adaptation problems associated with migration (Chen et al., 2016).

Nevertheless, the occurrence rates (1.1%–27.0%) of delinquent behaviors in our sample appear to be lower than those previously reported for the general population (0.7%–69.3%) (e.g., Pyrooz & Decker, 2013; Shek & Zhu, 2018). The literature has yielded mixed results (e.g., Chen & Zhong, 2013; Firat, Iltas, & Gulmen, 2017). For example, Lo et al. (2018) report a positive relationship between migrant status and juvenile delinquency based on a sample of eighth graders in a large Chinese city, and conceptualized internal migration as a strain factor leading to delinquency. On the other hand, some researchers have argued that “immigrant youth who have not yet acculturated to the youth subculture of the host society are more law-abiding due to protections from their traditional traits” (Chen & Zhong, 2013, p. 210), suggesting that migrant children may display a lower level of delinquency in the earlier stages following their migration but become more delinquent once they are acculturated. While this issue is beyond the scope of the present study, it would be useful to trace migrant children’s delinquent involvement longitudinally, and to examine the associated protective and risk factors at different stages of acculturation.

The results confirmed the hypothesis that migrant children’s exposure to the experience of victimization, be it within the family, interpersonal settings, or the community, is significantly associated with delinquency after controlling for the effects of demographic factors (e.g., gender, parental marital status). The consistent effect suggests that victimization across different social contexts is an important source of strain for adolescents which may not only be associated with delinquent coping but also do harm to adolescents’ psychological well-being (Cheung, 2013; Maynard, Vaughn, Salas-Wright, & Vaughn, 2016; Segal & Mayadas, 2005). Researchers



**Fig. 1.** Moderating Effects of Self-Regulation on the Relationship between Three Types of Victimization and Delinquency. a. Simple slope test for the effects of family violence on delinquency. b. Simple slope test for the effects of interpersonal violence on delinquency. c. Simple slope test for the effects of community violence on delinquency.

have proposed that one key factor in migrant youths' mental health problems is their elevated level of victimization (Ye et al., 2016). Timely interventions to identify and stop victimization among migrant youth may represent an effective strategy for reducing/preventing delinquency and improving the psychological health of this population.

FV and PV were associated with more types of delinquent behaviors than CV, and had greater predictive effects. This finding substantiates one of the core arguments of Agnew's extended GST theory: that strain with certain characteristics (e.g., of great magnitude, perceived as unfair) is more likely to lead to deviance. Compared to victimization in the family and daily interpersonal contexts, CV is typically more chronic (Margolin & Gordis, 2000), occurs at a lower frequency, has a less direct impact on youths' lives, and tends to be perceived as less severe and unjust. Thus, children who have experienced CV may still have the capacity to use constructive strategies or resources (e.g., parents, friends) to cope with their negative experiences, instead of choosing to engage in delinquent behaviors to manage or escape from their perceived strain.

Given the significant correlations between personal strengths and delinquency, one may suspect that personal strengths serve as mediators in the relationship between victimization and delinquency. Existing empirical studies have not provided sufficient support for an association between victimization experience and personal strengths as relatively stable attributes (Peterson & Seligman, 2004). For example, based on a sample with personal trauma in one year, Duan, Guo, and Gan, (2015) have reported a non-significant relationship between personal strengths and PTSD scores, suggesting that post-traumatic stress disorder symptoms do not directly contribute to the development of personal strengths. Although it is possible that long-lasting victimization would reduce one's personal strengths, the present study focused on victimization occurring in the preceding year, which is unlikely to significantly affect the participants' personal strengths. Nevertheless, it would be worthwhile to investigate the effects of victimization on a child's personal strengths over time based on longitudinal study.

We investigated the role of personal strengths in the relationship between victimization and delinquency, which has been largely overlooked in prior research. We found that self-regulation, the ability to exert control over oneself in order to achieve goals, has both a direct effect on delinquent behaviors and a significant moderating effect on the victimization-delinquency relationship. Victimization was significantly associated with delinquency when self-regulation was low, while the association either became insignificant or was substantially reduced when adolescents had a high level of self-regulation. This observation is similar to the findings reported by Turanovic and Pratt (2013), who measured self-control in terms of compulsivity and sensation-seeking and whose focus was on the association between conventional crime and violent offending. Our study goes one step further by examining self-control as a personal strength and demonstrating its role in mitigating the effects of different forms of victimization on a wide range of delinquent behaviors. As such, the present findings provide further support for extended GST and highlight the protective function of self-regulation, as a trainable attribute, for youth in response to experiences of victimization across various social contexts.

Although the moderating effects of interpersonal and intellectual strengths were insignificant, all three personal strengths had direct and significant predictive effects on delinquent behaviors, meaning that personal strengths prevented one from engaging in

delinquent involvement for both victimized and non-victimized youth. This finding concurs with existing research showing the beneficial effects of exhibiting self-control, making efforts to seek out new information to solve problems (intellectual strength), and engaging in interpersonal relationships (interpersonal strength) in adverse conditions (Ardelt, 1997; Kwon, Chung, & Lee, 2011; Wikström & Treiber, 2007). It is worth noting that while the relationship between personal strengths and psychological well-being has been extensively reported in the positive psychology literature (e.g., Blanca, Ferragut, Ortiz-Tallo, & Bendayan, 2017; Hausler et al., 2017; Park, Peterson, & Seligman, 2004), the role of personal strengths has received scant research attention in the victimization literature (Shoshani & Slone, 2016). Guided by the current work, future studies should investigate further the function of personal strengths in supporting victimized youth to recover from these experiences, to learn effective coping strategies to replace various forms of maladaptive behaviors caused by victimization (e.g., substance use), and, more importantly, to thrive and enjoy positive development.

A number of practical implications can be drawn from the present study. The findings underscore the potentially powerful effects of personal strengths in reducing delinquent behaviors, particularly for youth with experiences of victimization. This suggests that educators and professionals should think about how they can help victimized young people to recognize, develop, and use their personal strengths. Specifically, an assessment of one's personal strengths can be conducted to help victimized youths to identify their strengths and potential. Awareness of one's strengths and emphasizing them in the processes of intervention would increase an individual's self-esteem and hopefulness, which contributes to the effectiveness of the intervention. Practitioners may also encourage and support victimized youths to use their own strengths and set goals they would like to achieve themselves. In this way, these youths can take on an active role and become co-producers of support, instead of passive consumers of support. Moreover, existing intervention programs for victimized youth may incorporate components focusing on personal strengths development, for example by providing training in skills to strengthen self-regulation. Such a strength-based approach has been found effective in helping adolescents engaging in substance use and deviant behavior (D'Amico, Hunter, Miles, Ewing, & Osilla, 2013), while more attention from professionals working with victimized youth is critically needed.

Meanwhile, several limitations of the present study are worth noting. First, the key limitation concerns the cross-sectional design. The hypothetical model is guided by GST but it is possible that youths' personal strengths may serve as a common predictor for both victimization and delinquency, or that delinquent behaviors may cause victimization (e.g., physical punishment by parents, or as suggested by routine activity theory). Longitudinal research is needed to better understand the causal relationships among victimization, personal strengths, and delinquent behaviors.

Second, a convenience sample of migrant children in Shanghai and Hangzhou was used in this study. As such, the generalizability of the present findings is limited. The existing design could serve as a preliminary study for theory-testing. The relationship between victimization and delinquency and the moderating effects of personal strengths should be further validated based on a large general population.

Third, while the conditioning effects of personal strengths were explained in terms of coping theory, we did not measure the specific coping strategies adopted by participants to handle experiences of victimization. To adequately understand the process of how personal strengths buffer the negative influence of victimization on delinquency through shaping one's coping strategies, future research should measure coping strategies directly and include this variable in its models. For example, researchers could examine whether different personal strengths are associated with adolescents' use of various coping strategies (e.g., active coping, seeking instrumental social support) to deal with experiences of victimization, and how these coping strategies may further predict adolescents' delinquent involvement.

Fourth, due to the scope of the present study, other important moderating factors mentioned in GST, such as social support and peer affiliation, were not examined. The present study serves to inform future research by including more personal strengths in the study of the victimization-delinquency relationship.

Fifth, as with most previous studies, we relied on self-reported measures of victimization, personal strengths, and delinquent behaviors. Although researchers have found that subjects can reliably self-report experiences of victimization and delinquent behaviors (Huizinga & Elliott, 1986; Koss, Gidycz, & Wisniewski, 1987), it would be better to include other informants (parents and teachers) or qualitative measures (e.g., disciplinary record), as endorsed by several researchers (DuBois & Karcher, 2013; Thornberry & Krohn, 2000). Future research could benefit from comparing findings obtained from self-reported measures and other data sources.

Last but not least, multiple statistical analyses were conducted which may potentially amplify the probability of a Type-I error. While these methods were selected in advance to investigate different research questions, and the findings are supported by scientific literature, we urge our readers to be cautious about interpreting the results.

Despite the above limitations, this study contributes to the literature of juvenile victimization by examining its problematic behavioral consequences and the buffering effects of personal strengths based on recent general strain and positive psychology theories. We found that different forms of victimization experience had a significant impact on delinquent coping, and that this impact was moderated by self-regulation. It was further confirmed that all three personal strengths have direct preventive effects on delinquency among both youth with experiences of victimization and those without. As the findings suggest, identifying methods to help victims to recognize, develop, and use their personal strengths should be integral to the support and intervention efforts for young victims.

#### **Declaration of conflicting interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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