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The moderation of culturally normative coping strategies on Taiwanese adolescent peer victimization and psychological distress

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ABSTRACT

The current study aimed to investigate the moderation effects of coping strategies on the association between perceived peer victimization and psychological distress including loneliness and depression. Applying the person-context fit developmental model, this research hypothesized that adaptive coping strategies, which are normative in Taiwan's culture (i.e., social support seeking), would buffer the link between peer victimization and psychological distress (i.e., depression and loneliness) in comparison with the culturally non-normative coping (i.e., problem-solving strategies). We also expected maladaptive coping strategies (i.e., internalizing strategies) would exacerbate the link between peer victimization and psychological distress. A latent interaction model was conducted with a sample of 730 Taiwanese adolescents attending one middle school. The results indicated that both support seeking strategies and problem-solving strategies buffered Taiwanese adolescents from loneliness and depression. Internalizing coping strategies placed Taiwanese adolescents at great risk of depression and loneliness. Support seeking strategies that are aligned with interdependent cultural contexts appeared to have greater protective effects than the culturally non-normative problem-solving strategies for adolescents who perceived high levels of victimization. The implications for prevention and intervention were discussed.

Peer victimization is recognized as a world-wide problem with international prevalence rates ranging between 9 and 54% (Undheim & Sund, 2010). The problem of peer victimization seriously impacts mental health during adolescence and is associated with impaired psychological well-being and physical health such as increased depressive symptoms, anxiety, and loneliness (Herge, La Greca, & Chan, 2016; Smith & Brain, 2000; Stapinski, Araya, Heron, Montgomery, & Stallard, 2015). One line of research conceptualizes coping strategies as a moderator which can protect or exacerbate adjustment depending on whether the specific strategies are adaptive or maladaptive (Zimmer-Gembeck & Skinner, 2008). Problem-focused coping and social support seeking strategies are defined as adaptive and are positively associated with adjustment whereas coping strategies that avoid the problem (e.g., crying) are conceptualized as maladaptive, exacerbating the maladjustment following the stressors (Hampel, Manhal, & Hayer, 2009).

However, the conceptualization of adaptive coping that implies invariant effects of coping strategies across contexts is problematic. The person-context fit model suggests that the effects of coping may depend on the fit between the strategies being used and the normative strategies in a given context (Magnusson & Stattin, 1998). That said, the dissonance between adolescents' coping and the culturally normative coping is expected to yield negative effects on adjustment. The current literature on coping strategies mostly

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assesses samples from Western societies with the majority of participants being White adolescents. It is unclear if coping strategies that are found adaptive in the literature have similar effects for adolescents residing in a different cultural context (e.g., Taiwanese culture). Built on the person-context fit model, we examined the moderation effect of coping strategies between psychological distress and peer victimization using a Taiwanese adolescent sample. We proposed that the use of coping strategies documented as normative in Taiwan's culture would buffer adolescents from psychological distress; coping strategies that are not normative in Taiwan's culture, regardless of if it is considered adaptive in Western societies, would exacerbate the relation between peer victimization and psychological distress.

1. Adolescent coping strategies in response to peer victimization

The ability to adapt to stressful situations, such as peer victimization, is a prominent aspect of human development. Coping is the process within which individuals use different strategies to regulate or direct their behaviors in response to a source of stress. Coping is conceptualized as purposeful, goal-directed efforts aimed at managing one's own behaviors when encountering a stressful event that exceeds personal resources (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Compas, Jaser, Dunn, & Rodriguez, 2012; Lazarus & Folkman, 1984).

In the peer victimization literature, the most widely assessed coping construct is the approach versus avoidance coping dimension (e.g., Kochenderfer-Ladd, 2004; Kochenderfer-Ladd & Skinner, 2002; Ma & Bellmore, 2016). Approach coping is defined as positive behaviors or strategies that aim to actively treat or deal with stress through generating a positive solution, changing the stressful event, or seeking support from friends (Roth & Cohen, 1986). Common coping strategies built upon this approach-avoidance dimension include two approach strategies: first, problem-solving coping—when an individual enacts a course of behaviors to alter or directly confront the stressful event; second, seeking social support coping — when an individual utilizes social connection to deal with stress by asking for advice or assistance from another person, often a friend or a teacher (Causey & Dubow, 1992).

The other coping dimension is conceptualized as the avoidance coping dimension, which refers to behavioral, cognitive, and emotional strategies that do not directly treat the source of stress. Typical avoidance coping entails denying a situation, ignoring it, or ruminating on the distress (Roth & Cohen, 1986). Common strategies identified under this dimension included three strategies: distancing coping—when an individual forces themselves not to think about the stressor; internalizing coping—when an individual blames themselves for causing the harassment or continues to ruminate about the details of the harassment; externalizing coping—when individual take out negative emotions on others or objects (Causey & Dubow, 1992). Research examining the direct association between coping strategies and psychological adjustment suggested that problem-focused coping and seeking social support strategies were negatively associated with adolescent depression and loneliness (Hampel et al., 2009; Kochenderfer-Ladd & Skinner, 2002). In contrast, internalizing coping and externalizing coping strategies were associated with adolescent depressive symptoms, loneliness, and anxiety (Ben-Zur, 2005; Causey & Dubow, 1992; Compas et al., 2012).

Coping research typically conceptualizes four associations between coping, stress, and adjustment: coping as moderator, mediator, mechanism, and reciprocal process associations (Zimmer-Gembeck & Skinner, 2008). The research examining coping as a moderator, given its robustness to examination with cross-sectional data, is most fruitful and resulted in two general trends in the literature (Aldwin, 2007; Grant et al., 2006). First, positive coping strategies such as problem-solving strategies and support-seeking strategies have been found to buffer adolescents from depression following the interpersonal distress (Hampel et al., 2009; Singh & Bussey, 2011; Sugimura, Rudolph, & Agoston, 2014). In contrast, maladaptive coping such as rumination, internalizing coping (e.g., crying), and externalizing coping (e.g., getting mad) mostly placed adolescents at further risk of exacerbated depression (Compas et al., 2001; Endler & Parker, 1990; McWilliams, Cox, & Enns, 2003; Rohde, Lewinsohn, Tilson, & Seeley, 1990).

1.1. Person-context fit model

The aforementioned coping research implies that some coping strategies are inherently adaptive during adolescence, which may be a problematic conceptualization given that research also showed that the effects of coping strategies are context-dependent. For example, Kochenderfer-Ladd and Skinner (2002) found the effects of social support seeking strategies on adolescent victims to be gender-specific. Specifically, support-seeking protected girl victims, but not boy victims, from depression. The authors contended that this is because seeking social support may be gender-atypical behavior for boys. This notion highlights the importance of person-context fit and implies that coping strategies that fit the norm of a given context may be more conducive to adolescents' adjustment.

The person-context fit theoretical model provides a framework for understanding how adjustment is dependent on the behaviors and characteristics of an individual and their context (Magnusson & Stattin, 1998). According to the goodness-of-fit concept, consonance between individuals and their social context will yield positive adjustment, whereas dissonance between individuals' behaviors and the normative behaviors of their context will yield negative adjustment (Bellmore, Witkow, Graham, & Juvonen, 2004; Kindermann & Valsiner, 1995; Lerner & Lerner, 1983). Research indicates that adolescents experience negative interpersonal consequences and negative social adjustment when he/she is a social misfit of their group—when individuals' behaviors are different from what was normative for their group (e.g., Stormshak et al., 1999). Bellmore et al. (2004) found that adolescent victims reported more anxiety and loneliness in classrooms where fewer peers were victimized—the perceived non-normative experiences compared to peers led adolescents to feel lonelier. This result echoed Stormshak et al.'s (1999) findings that showed the aggressive behaviors of first-graders predicted peer rejection only in classrooms where low levels of aggression was reported. These studies suggest that the determinants of adolescent adjustment are not invariant across contexts, but they depend on what behavior is normative in the context.

To date, the theory of person-context fit has not been explicitly examined in the association between coping and adjustment. Yet, coping strategies are culturally shaped behaviors, and coping strategies that are considered normative or typical may change from culture to culture (Lam & Zane, 2004). Applying the person-context fit model, it is reasonable to expect that the role of coping as moderator will buffer adolescents from maladjustment only when the targeted coping strategies are normative in a cultural context.

1.2. Culturally normative coping strategies

Research in cross-cultural studies has found a trend: Support-seeking strategies are more commonly reported in the East Asian populations than problem-solving strategies. For example, Lam and Zane (2004) found that Asian American adolescents were less likely to use problem-solving strategies which aim to change the environment to meet their needs (measured as primary coping in their paper). When examined outside Western societies, similar results were found such that a high portion of Taiwanese adolescents and Japanese adolescents utilized support-seeking strategies but not problem-solving strategies when they faced peer victimization (Ma & Bellmore, 2016; Smith et al., 1999). Similarly, Yeh and Inose (2002) studied 274 adolescents from China, Hong-Kong, Japan, and South Korea and found that the most frequently reported coping strategy was the use of seeking social support. This fact is further echoed by Shen (2009), who suggested that social support should be the most important factor to consider when designing a prevention or intervention for reducing depression in the Chinese-speaking society. Together, these studies suggest that social support seeking, as opposed to problem-solving strategies, may be more culturally normative for East Asian immigrant adolescents or adolescents residing in East Asian contexts.

Differences in the prevalence of coping strategies used in East Asian contexts have roots established in collectivistic cultural values. The dominant interdependent cultural norms in Asian contexts encourage adolescents to seek connections and develop a relational self, rather than developing an independent self that solves one's own problem (Kagitcibasi, 2007; Ma & Bellmore, 2016; Markus & Kitayama, 1991; Singelis, 1994; Triandis, 1989). As a result, individuals in East Asian cultural contexts are more likely to sanction support seeking and emphasize interpersonal support as a validated state of interdependence which entails less emotional cost in support seeking behaviors among the same populations (Park et al., 2013). In contrast, less emphasis placed on cultivating individual independence may result in East Asian adolescents' decreased endorsement of problem-solving strategies. Even for third-generation Asian Americans, the cultural tendency of interdependence is a strong predictor of low endorsement of problem-solving strategies (Lam & Zane, 2004).

Although not yet examined outside Western societies, two studies conducted in Australia found that the effects of problem-solving strategies are dependent on adolescents' cultural backgrounds. Jose and Huntsinger (2005) compared Chinese American adolescents with European American adolescents and found that problem-solving coping strategies buffered European Americans, but not Chinese Americans from depression and anxiety. The authors also stated that the prevailing cultural beliefs impacted the effect of the problem-solving strategy. In a further analysis, Jose and Schurer (2010) tested the role of cultural beliefs on coping and depression. They found that when Asian Australian adolescents held strong collectivist cultural values (i.e., values of interdependence), the use of problem-solving was strongly related to maladjustment. Although these authors did not assess context-normative coping in their studies, they show that the concept of adaptive coping is not invariant and cannot be separated from an individual's cultural context.

Applying the concept of person-context fit model (Lerner & Lerner, 1983), we proposed that the psychological distress associations (i.e., depression and loneliness) of coping with peer victimization depend on whether or not the specific coping strategies are culturally normative. For Taiwanese adolescents situated in an interdependent cultural context where seeking interpersonal connections is the norm, coping strategies with an interdependent-focus (i.e., social support seeking) may be more adaptive than coping strategies with an individualistic-focus (i.e., problem-solving strategies). Unfortunately, this hypothesis has never been tested outside of Western societies, making it difficult for Taiwan's education practitioners to develop culturally-appropriate prevention and intervention work to combat peer victimization. To mend this gap, the current study aimed to provide an understanding of what coping strategies moderate the association between psychological distress and peer victimization, for the development of appropriate intervention and prevention programming in those areas.

1.3. The current study

The current study aimed to investigate the moderation effects of coping strategies on the association between peer victimization and psychological distress of loneliness and depression using a sample of Taiwanese adolescents. The goal was to identify what coping strategies buffer the negative effects of peer victimization on depression and loneliness. Based on evidence indicating that social support seeking, but not problem-solving coping, is more aligned with interdependent culture (Ma & Bellmore, 2016), we expected that social support seeking strategies would buffer the negative effects of peer victimization on adolescents' adjustment. We also expected that adolescent victims' endorsement of problem-solving strategies, which are less aligned with interdependent culture, would exacerbate their psychological distress. We chose Causey and Dubow's (1992) five coping strategies because they are the most widely used in studies assessing peer victimization and victim's coping strategies (e.g., Kochenderfer-Ladd, 2004; Kochenderfer-Ladd & Skinner, 2002).

School bullying and peer victimization have been increasingly recognized in East Asian countries and show a similar prevalence rate as U.S. and European countries (Kanetsuna, Smith, & Morita, 2006; Wei, Jonson-Reid, & Tsao, 2007). In Taiwan, peer victimization has been noted as the leading cause of adolescent depression (Child Welfare League Foundation of Taiwan, 2014). Though educators in these areas have started developing prevention strategies to combat the problem, this prevention work is premature because it utilizes findings from majority Caucasian samples. This study aimed to mend the aforementioned gap and has twofold

significance. First, it contributes to the understanding of coping as a moderator in the social development in non-Caucasian populations. Second, it contributes to the intervention practices and prevention programming for K-12 school systems in Taiwan's cultural contexts or for other East-Asian areas that share similar cultural values. The study results that identify adaptive coping strategies for Taiwanese adolescents may also be applied in Western school systems in designing culturally-responsive prevention programs where there are recent immigrants from Taiwan or East Asian cultures.

2. Method

2.1. Participants

Participants were 730 seventh graders (49% girls, mean age 12.8 years) attending one middle school in a southern city in Taiwan. Based on self-reports of ethnicity, the sample was 86% Han Taiwanese (n = 630), 1% Aboriginals (n = 5), 3% New Immigrants (n = 21), and 10% Other/No response (n = 74). The school was chosen because it represented the general size and characteristics of middle schools in Taiwan. The demographic data for the sample were similar to those reported by Taiwan's Statistic Bureau (e.g., National Bureau of Statistics of Taiwan, 2017). The average family education level in the area where the public school is located was as follows: 3.5% graduate degree, 25.2% college degree, 30.6% high school degree, and 40.7% less than high school degree. There were no exclusionary criteria applied. All registered 7th graders from this school were invited to participate in the study. Ninety-eight percent of students in this middle school participated in this study. The participants were from 21 classes, with approximately 40 to 45 students in each class.

2.2. Procedure

The University Institutional Review Board (IRB) approved this study. Before data collection, a research information sheet was distributed to all seventh graders to take home to their parents. This sheet contained similar elements to the parental consent form except it did not provide a space for a signature. The parental research information sheet was used because collecting an active parental consent form is not a norm in Taiwan. The research information sheet for parents was recommended by three school principals, an educational administrator, and a professor in a university of education. In Taiwan, teachers in middle schools use the "teacher-parent contact journal" to communicate with parents on a daily basis. Parents usually sign in the corner of the daily journal and write a few sentences to express opinions on assigned activities on the following day. After reading the research information sheet, parents signed on the daily journal to indicate that they had read it as well as to express their willingness to have their child participate in the study. We did not collect these signatures because the contact journal was private among the teacher, the student, and the parents. Yet, during data collection, classroom teachers helped to identify the very few students whose parents refused their participation in the study. Data were collected during the physical education periods. Participating students sat in their normal seats in their own classrooms and individually completed the self-report measures of coping strategies, peer victimization, and psychological distress. Youth assent was obtained for each participant in this study. Participants did not receive any compensation.

2.3. Measures

All measures were initially created in English and were then back-translated to generate the Chinese version (Brislin, 1970). Two bilingual graduate students of the Educational Psychology Department in a Midwest four-year university worked on translations of measures. The first student translated all measures from English to Chinese, and then the second student translated all measures from Chinese to English. Consistent discussions were held among translators when words or phrases of the back-translated version of measures were different from those in the original English version. A native English-speaking professor in the Educational Psychology Department was consulted to clarify meanings of words and phrases that were different before and after the translation.

2.3.1. Coping strategies

To assess adolescents' use of various coping strategies in response to a peer victimization event, participants were asked to think about what they would do if they had just encountered a hypothetical peer victimization scenario: *Imagine that you're walking by yourself down the hallway on your way to class, carrying a stack of exam sheets as well as a math take-home exam paper that you stayed up late last night to finish. You look at your watch and realize that the tardy bell is about to ring in one minute! You start to walk really fast. All of a sudden, a student knocks you into a classroom wall so that you stumble and drop everything. The student steps on your math take-home exam paper, leaving a dirty footprint on it. The student looks down at the exam paper, up at you, and then laughs. Other kids who were walking by to class also start laughing at you.* The scenario has been carefully evaluated by a group of Taiwanese middle school teachers to ensure that the content matches the typical school context in Taiwan.

Causey and Dubow's (1992) Self-Report Coping Scales was modified to assess adolescents' responses given their encounter of this hypothetical scenario. The modified coping scale assessed included 37 items that tap five coping subscales: (1) Support-Seeking (e.g., talk to the teacher about it); (2) Problem Solving (e.g., try to think of different ways to solve the situation); (3) Distancing (e.g., make believe nothing happened); (4) Internalizing (e.g., cry about it); and (5) Externalizing (e.g., curse out loud). Participants were asked to read this scenario and then rate each item on a five-point Likert scale, ranging from 1 = *No way* to 5 = *For sure yes*. The higher mean score represents a higher endorsement of a coping strategy. The original reliability of the scale from Causey and Dubow's (1992) study was $\alpha = 0.84$ for seeking social support coping, $\alpha = 0.84$ for problem-solving coping, $\alpha = 0.69$ for distancing coping,

α = 0.66 for internalizing coping, and α = 0.68 for externalizing coping. The five factors showed good validity using indices of anxiety, behavioral esteem, and perceived control (Causey & Dubow, 1992).

To examine if the above-mentioned five factors hold within Taiwanese sample, we ran exploratory factor analysis and confirmatory factor analysis using the two randomly split subsamples, which yielded a slightly different five-factor-structure that excluded the externalizing coping factor.

2.3.2. Exploratory factor analysis and confirmatory factor analysis

The Taiwanese sample was split randomly to two subsamples for data calibration (EFA) and data validation purposes (CFA). Principal Axis Factoring (PAF) with Promax rotation was applied to allow correlations among coping factors. Parallel analysis, which produced optimal solutions to the number of components problem and is found superior to the typical Eigenvalues-Greater-Than-One Test (O'Connor, 2000), was used to determine the number of factors to keep for the current sample.

As a result, five coping subscales which were slightly different from the original Causey and Dubow (1992) study were extracted: (1) Adult Support Seeking (6 items), (2) Peer Support Seeking (4 items), (3) Problem-Solving (8 items), (4) Internalizing (7 items), and (5) Distancing (6 items). The Peer Support-Seeking factor was added as a factor for the strong factor loadings, composite reliability, and content validity. The Externalizing coping factor was dropped for its low factor loadings and therefore the items deleted (5 items). Appendix A shows the remaining 31 items organized by factors.

These five factors demonstrate strong cultural equivalence (when compared to a U.S. adolescent sample) and good content validity in Taiwan's school context (Ma & Bellmore, 2016). Specifically, the second random dataset was used to cross-validate with Confirmatory Factor Analysis for the model derived from sample one which showed a moderate fit: $\chi^2(315, N = 622) = 996.73$, $p < 0.05$, comparative fit index (CFI) = 0.92; Tucker–Lewis index (TLI) = 0.92; root mean square error of approximation (RMSEA) = 0.048, 90% confidence interval (CI) = [0.044, 0.053], $p = 0.74$. The composite reliability for the five subscales for the current Taiwanese sample were α = 0.92 for Adult Support-Seeking, α = 0.78 for Peer Support-Seeking, α = 0.83 for Problem-Solving, α = 0.84 for Distancing, and α = 0.85 for Internalizing coping strategy.

2.3.3. Peer victimization

Peer victimization was measured using a modified version of Neary and Joseph's (1994) Peer Victimization Scale which assessed self-perceptions of being the target of peer aggression. Items described two types of children. For example, “Some kids are *not* called bad names by other kids (a), *BUT* other kids are *often* called bad names by other kids (b),” and participants were asked to choose “which type of kid is most like you.” Participants then decided whether the description was “sort of true for me, coded as 2 for (a) or 3 for (b)” or “really true for me, coded as 1 for (a) or 4 for (b).” This scale was composed of four items. Each item assessed a different form of victimization: verbal, relational, physical, and general. The construct of peer victimization has been examined—though not with exactly the same items—in Taiwan (Wei et al., 2007) and the four forms of victimization (i.e., verbal, relational, physical, and general) were found to exist in the middle school context in Taiwan. A mean of the four items (scores range from 1 to 4) was calculated such that higher scores indicated stronger feelings of being victimized by peers (α = 0.60). Specifically, the α is 0.65 for our girl sample and 0.55 for our boy sample. The original alpha from the Neary and Joseph's (1994) study is α = 0.83 from a sample of 60 middle school girls in Ireland, which may explain why the scales have a better reliability in the current sample of adolescent girls as opposed to boys.

2.3.4. Psychological distress

Psychological distress of adolescents was assessed using two scales: loneliness and depression.

2.3.4.1. Loneliness. Adolescents' feelings of loneliness at school were assessed with the 16-item Loneliness Scale (Asher & Wheeler, 1985). Participants were asked to rate items such as “It's hard for me to make new friends” on a five-point Likert scale, ranging from 1 = *not true at all* to 5 = *always true*. This scale has been tested with Chinese children and adolescents and has shown good reliability and validity (Zhang et al., 2009). A mean of the 16 items was calculated such that higher scores indicated more loneliness felt by the adolescents (α = 0.93).

2.3.4.2. Depression. Adolescents' feelings of depression were assessed by the 10-item short form of the Children's Depression Inventory (CDI; Sitarenios & Kovacs, 1999). One sample item with the three-point likert scale rating was “1 = I am sad once in a while,” “2 = I am sad many times,” and “3 = I am sad all the time.” Participants were asked to rate each following item on a three-point Likert scale from 1 to 3. The CDI has been widely used in Chinese culture and has demonstrated cultural appropriateness (e.g., Chan, 1997; Wang, Hu, & Shen, 2011). A mean of the 10 items was calculated where higher scores indicated more depressive feelings experienced by the adolescents (α = 0.78).

2.4. Analysis plan

We first performed data screening for skewness and kurtosis and computed descriptive statistics (means, standard deviations, correlations) of all variables. Following that, we estimated a measurement model of the key constructs included in this study (see Fig. 1). This model included latent peer victimization, support-seeking, problem-solving, distancing, and internalizing, and psychological distress. Gender was included as a covariate. In this model, (a) latent peer victimization was indicated by a composite of perceived victimization (e.g., general, physical, verbal, and relational form of victimization experiences), (b) latent psychological

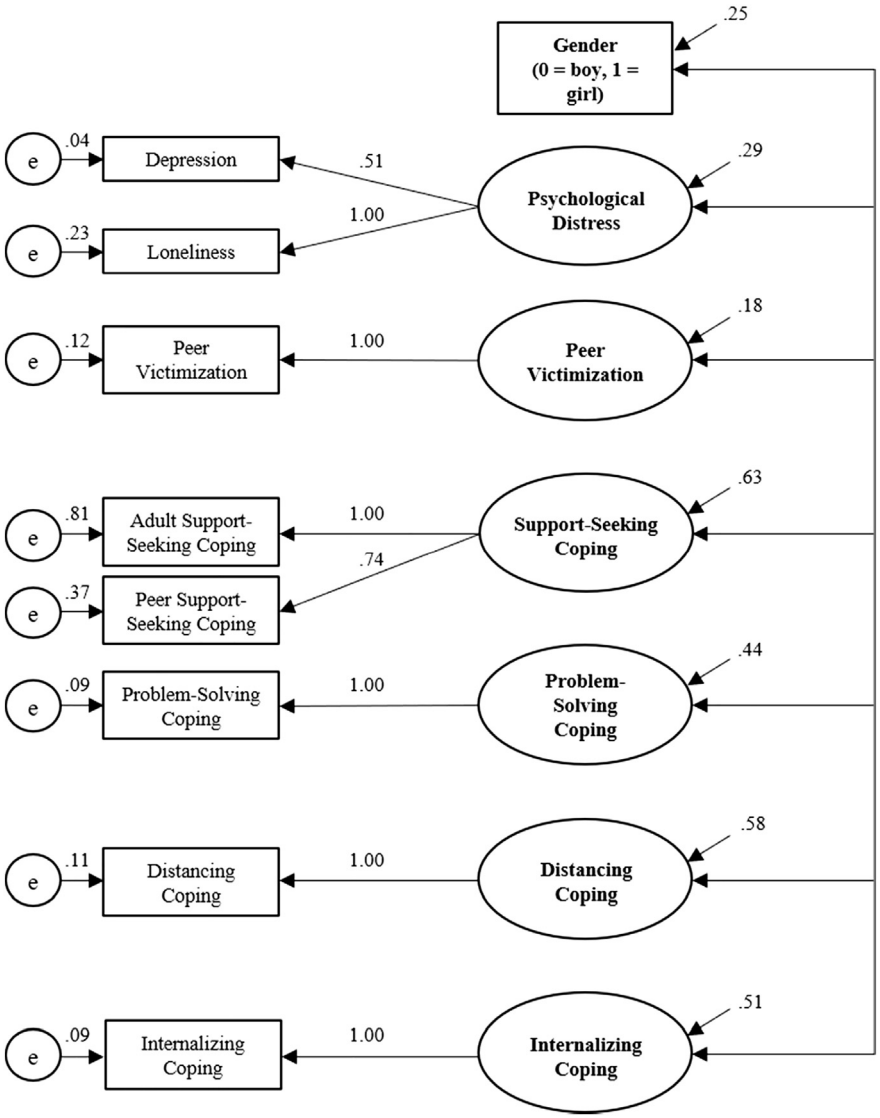


Fig. 1. Measurement model of the key constructs. Correlations among the exogenous variables are shown in Table 2. Unstandardized coefficients are presented.

distress was indicated by depressive symptoms and loneliness, (c) latent support-seeking was indicated by peer support-seeking and adult support-seeking composites, and (d) latent problem-solving, distancing, and internalizing coping were indicated by the corresponding coping composites. In order to identify the model, measurement errors for the latent constructs with only one indicator were explicitly constrained and corrected according to each indicator's reliability (Kline, 2015). Note that we combined the peer support seeking and adult support seeking factors to be one latent factor labeled as support seeking because they were both culturally normative coping strategies in Taiwan; therefore, we did not have theoretical reasons to expect that the moderation effects would be different across the two factors. Also, it is noteworthy that although the measurement model based on the coping items showed a moderate model fit (see the measure section), we decided to use the composite scores for estimating the baseline model, as well as all subsequent models. This approach allowed us to achieve a much more feasible *N*:*q* ratio (ratio of required sample size to number of parameters to be estimated) under the available sample size ($N = 730$; $q = 43$) for an adequate statistical power (Jackson, 2003). Hayduk and Littvay (2012) argued that the use of single indicator or fewer indicators for latent variables (see also Hayduk, 1996; Hayduk & Pazderka-Robinson, 2007) may increase the latent variables' precision in representing the underlying theoretical constructs. The model fit was evaluated according to Hu and Bentler's (1998) criteria which included the chi-square statistics, comparative fit index (CFI), the root mean square residual error of approximation (RMSEA), and the Standardized Root Mean Square (SRMR). A CFI value of ≥ 0.95, RMSEA value of ≤ 0.06, and SRMR value of ≤ 0.08 would indicate a good fit (Hu & Bentler, 1998). Hu and Bentler recommended that researchers should combine SRMR with another fit index (e.g., CFI or RMSEA) for indication of model fit.

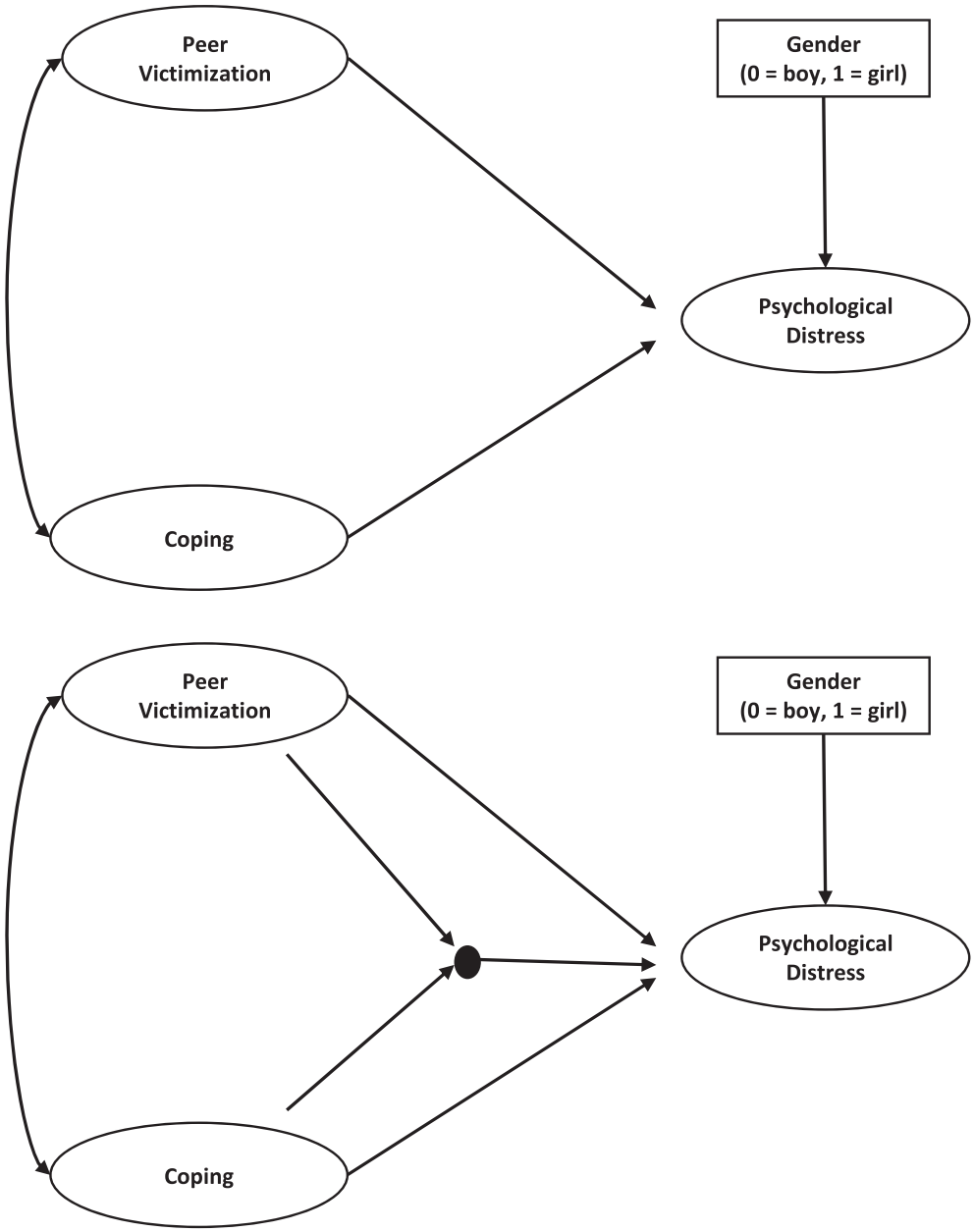


Fig. 2. The structural model of peer victimization, coping, and psychological distress. Top panel represents the baseline model that estimates the main effects of peer victimization and coping on psychological distress. Bottom panel represents the model that estimates the latent interaction between peer victimization and coping on psychological distress. The black filled circle represents the interaction (see Muthén & Muthén, 1998-2017, p 84). A series of four models were estimated for support-seeking, problem-solving, distancing, and internalizing coping, respectively. Gender was included as a covariate.

To examine the hypotheses of whether coping strategies would moderate the effect of peer victimization on psychological distress, we specified a series of latent interaction models with the latent moderated structural equations (LMS) method (Klein & Moosbrugger, 2000; Sardeshmukh & Vandenberg, 2016) in Mplus 7.4 (Muthén & Muthén, 1998-2017). Because the latent interaction models were specified within the LMS framework (Klein & Moosbrugger, 2000; Maslowsky, Jager, & Hemken, 2015), conventional SEM fit indices (e.g., CFI, RMSEA, SRMR) would not be available. Thus, it is important to first establish a baseline model (see Fig. 2, top panel) that fits the data well. The baseline model estimated the effects of peer victimization and coping on psychological distress, the interaction term was not included. For the baseline model, the overall model fit was evaluated according to Hu and Bentler's (1998) criteria as indicated earlier. Upon the establishment of a well-fitted baseline model, the moderating effects of coping strategies were examined by estimating the interaction term between peer victimization and coping variables (see Fig. 2, bottom panel). Considering that the

Table 1
Descriptive statistics and bivariate correlations for study variables.

	Descriptive statistics					Bivariate correlations							
Variable	Total *M* (*SD*)	Boys *M* (*SD*)	Girls *M* (*SD*)	*t*-test	Percent missing	1	2	3	4	5	6	7	8
1. Perceived peer victimization	2.06 (0.55)	2.12 (0.55)	1.99 (0.54)	3.16**	3.6	–							
2. Adult support-seeking coping	3.29 (1.20)	3.35 (1.19)	3.22 (1.21)	1.41	1.9	−0.12**	–						
3. Peer support-seeking coping	3.84 (0.85)	3.76 (0.86)	3.93 (0.82)	−2.71**	2.1	−0.12**	0.46***	–					
4. Problem-solving coping	3.66 (0.73)	3.67 (0.76)	3.64 (0.69)	0.44	1.9	−0.19**	0.55***	0.57***	–				
5. Distancing coping	2.60 (0.83)	2.57 (0.87)	2.62 (0.79)	−0.72	1.9	0.04	−0.09*	−0.01	0.10*	–			
6. Internalizing coping	2.33 (0.77)	2.25 (0.77)	2.40 (0.76)	−2.61**	1.9	0.24**	0.03	0.06	0.05	0.19***	–		
7. Loneliness	1.91 (0.72)	1.91 (0.71)	1.90 (0.73)	0.19	1.8	0.39**	−0.14***	−0.31***	−0.23***	0.06	0.30***	–	
8. Depression	1.42 (0.33)	1.40 (0.34)	1.44 (0.33)	−1.45	2.1	0.40**	−0.27***	−0.20***	−0.18***	0.03	0.35***	0.61***	–

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

coping strategies could be moderately related which causes the issue of multicollinearity between coping predictors, we first examined the latent correlations between copings in the measurement model. If the issue of multicollinearity was revealed ($r \geq 0.90$), then the four moderators (support-seeking, problem-solving, distancing, internalizing) would be examined independently in a series of four models. Significant interaction terms were interpreted by plotting the simple slopes based on high (1 *SD* above mean) and low (1 *SD* below mean) levels of a predictor and moderator (Aiken & West, 1991). The Mplus syntax was provided in Appendix B to facilitate replication of our work.

3. Results

3.1. Preliminary analyses

Descriptive statistics and bivariate correlations for all variables are presented in Table 1. All variables had < 5% missing data and the skewness and kurtosis were below two, indicating that the data were not significantly nonnormally distributed. The missing percentage for each variable was reported in Table 1. We conducted Little's Missing Completely at Random (MCAR) test and missing completely at random assumption was met, $\chi^2(65) = 56.37$; $p = 0.77$. Thus, Full Information Maximum Likelihood (FIML) estimation was used to handle missing data in subsequent SEM estimations.

Gender differences in adolescents' perceived peer victimization, coping strategies, and psychological distress were tested using a series of *t*-tests. As indicated in Table 1, boys reported higher levels of verbal, physical, and general victimization than did girls. Girls reported higher levels of peer support-seeking and internalizing coping than did boys. Adolescents' endorsement of approach coping strategies, including adult support-seeking, peer support-seeking, and problem-solving coping, were positively correlated with each other. Meanwhile, endorsement of avoidance coping strategies, including distancing coping and internalizing coping, were positively correlated. Distancing coping was positively correlated with problem-solving, while adult support-seeking coping was negatively associated with internalizing coping.

Adolescents' experiences of perceived peer victimization were positively associated with adolescents' self-report of both indices of psychological distress. Being an adolescent victim was associated with higher endorsement of internalizing coping, higher indices of psychological distress, and less endorsement of problem-solving coping and support seeking from adults and peers. Adolescents who endorsed more internalizing coping, less support seeking from adults and peers, and less problem-solving were more likely to report higher psychological distress.

3.2. Measurement model

We first estimated the measurement model as depicted in Fig. 1. The model fit for the baseline model was acceptable, with $\chi^2(11) = 80.30$, $p < 0.001$, CFI = 0.95, RMSEA = 0.09 [90% CI = 0.075 to 0.113], SRMR = 0.03. Although the RMSEA index was not below 0.08, the combination of CFI and SRMR indicated an acceptable model fit (see Hu & Bentler, 1998). Furthermore, MacCallum, Browne, and Sugawara (1996) suggested that a RMSEA of 0.08 to 0.10 indicated an acceptable fit. Unstandardized factor loadings and path coefficients are displayed in Fig. 1. Correlations among the variables included in the measurement model are

Table 2
Correlations among latent variables.

	1	2	3	4	5	6	7
1. Victimization	–						
2. Support-seeking	−0.23**	–					
3. Problem-Solving	−0.27**	0.90**	–				
4. Distancing	0.05	−0.07	0.11*	–			
5. Internalizing	0.34**	0.07	0.06	0.23**	–		
6. Psychological distress	0.65**	−0.43**	−0.29**	0.06	0.45**	–	
7. Gender	−0.14**	0.04	−0.02	0.03	0.11**	0.04	–

* $p < 0.05$.
** $p < 0.01$.

presented in Table 2. As expected, higher victimization was associated with higher psychological distress. Higher support-seeking and problem-solving copings were related to lower psychological distress. In contrast, internalizing coping was related to higher psychological distress. In addition, problem-solving coping was highly correlated with support-seeking coping ($r = 0.90$), indicating a multicollinearity may be highly likely the case. To minimize the suppression effects among coping variables when they are examined in the same model, we tested the latent moderation effects of the four coping strategies separately. See Fig. 2 for a generic model of the four latent interaction models.

3.3. Latent interaction models

The LMS approach was adopted to examine the interaction effects of peer victimization and coping strategies on psychological distress (Maslowsky et al., 2015). As recommended by Maslowsky et al. (2015), we estimated a series of 4 baseline models (for each coping; see Fig. 2, top panel) before including the interaction term. Fit indices for these models are presented in Table 3. Overall, all baseline models fitted the data well. Therefore, we proceeded with models that included the interaction term between peer victimization and coping (see Fig. 2, bottom panel). Unstandardized path coefficients and total R^2s for each model are presented in Table 3.

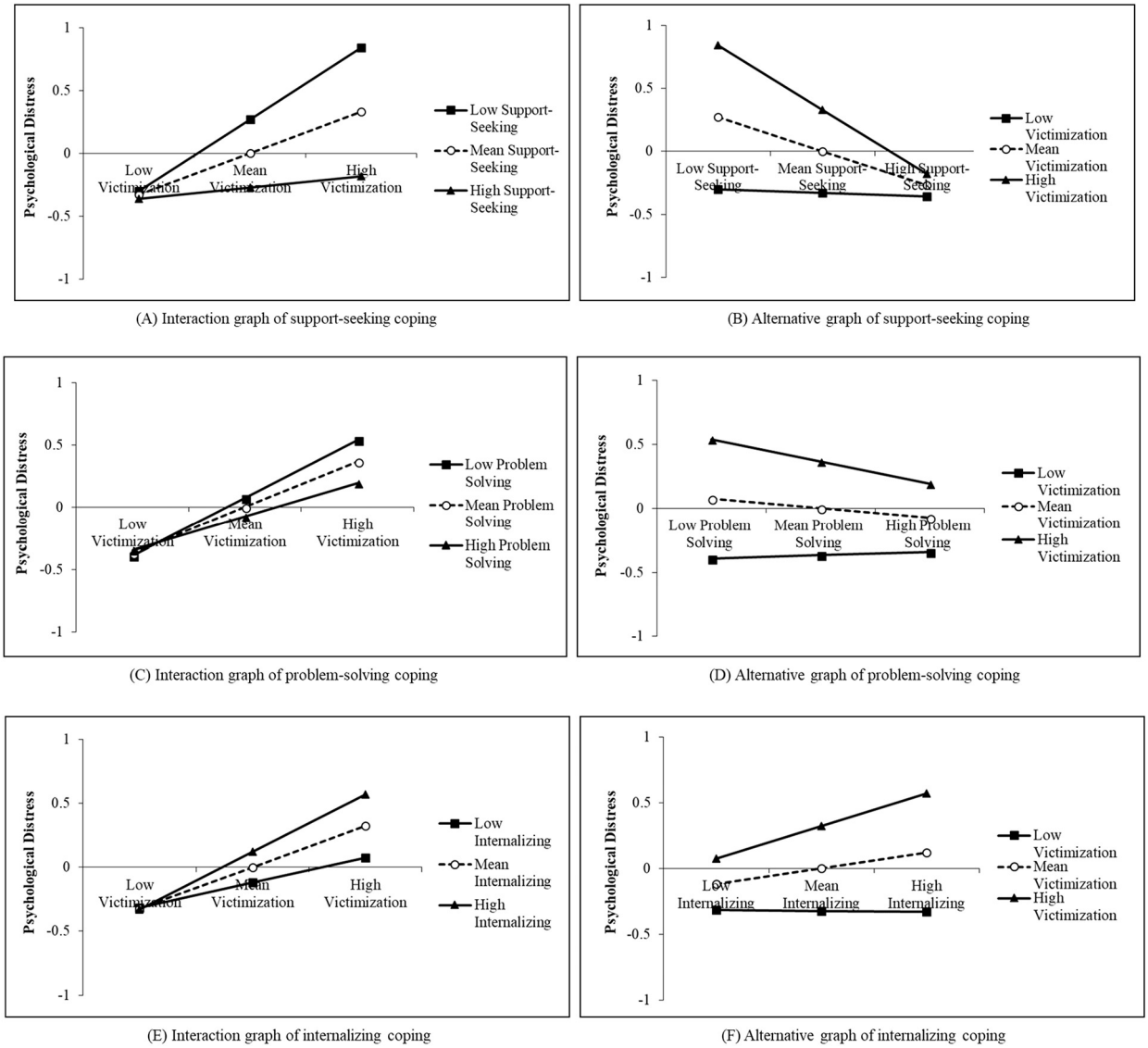
Results showed a significant interaction between peer victimization and support-seeking coping. As depicted in Fig. 3A, simple slopes revealed that the association between peer victimization and psychological distress was stronger for adolescents with lower levels of support-seeking coping ($b = 0.56$, $SE = 0.04$, $p < 0.001$), compared to those with higher support-seeking coping ($b = 0.09$, $SE = 0.03$, $p < 0.001$). An alternative presentation of this interaction effect is also shown in Fig. 3B. Simple slopes revealed that the association between support-seeking and psychological distress was stronger for adolescents with higher levels of victimization ($b = -0.51$, $SE = 0.04$, $p < 0.001$), compared to those with lower levels of victimization ($b = -0.03$, $SE = 0.03$, $p = 0.29$).

Results showed a significant interaction between peer victimization and problem-solving. As depicted in Fig. 3C, simple slopes revealed that the association between peer victimization and psychological distress was stronger for adolescents with lower level of problem-solving coping ($b = 0.46$, $SE = 0.04$, $p < 0.001$), compared to those with higher problem-solving coping ($b = 0.27$, $SE = 0.04$, $p < 0.001$). An alternative presentation of this interaction effect is also shown in Fig. 3D. Simple slopes revealed that the association between problem-solving coping and psychological distress was stronger for adolescents with higher levels of victimization ($b = -0.17$, $SE = 0.04$, $p < 0.001$), compared to those with lower levels of victimization ($b = 0.02$, $SE = 0.03$, $p = 0.48$).

Table 3
Unstandardized regression path coefficients (and standard errors) of the latent interaction models predicting psychological distress.

	Coping as Moderator			
	Support-seeking	Problem-solving	Distancing	Internalizing
Gender	0.13 (0.03)*	0.13 (0.04)*	0.15 (0.05)*	0.10 (0.04)*
Peer victimization	0.33 (0.03)*	0.37 (0.03)*	0.37 (0.03)*	0.32 (0.03)*
Coping	−0.27 (0.03)*	−0.07 (0.03)*	0.01 (0.03)	0.12 (0.03)*
Peer victimization * Coping	−0.24 (0.02)*	−0.10 (0.03)*	−0.01 (0.03)	0.13 (0.02)*
Fit indices (baseline model)				
χ^2 (*df*)	65.67 (5)	5.79 (2)	4.47 (2)	4.9 (2)
CFI	0.92	0.99	0.99	0.99
TLI	0.77	0.96	0.98	0.98
RMSEA	0.17	0.05	0.04	0.01
SRMR	0.03	0.01	0.01	0.04
Total R^2	1.00[a]	0.53*	0.44*	0.60*

Note. Exogenous variables were scaled to have means of 0 and variances of 1.
[a] Due to a negative residual observed in the endogenous variable (psychological distress), we constrained its residual variance to have a value of 0 in order to converge the model.
* $p < 0.05$.



(A) Interaction graph of support-seeking coping

(B) Alternative graph of support-seeking coping

(C) Interaction graph of problem-solving coping

(D) Alternative graph of problem-solving coping

(E) Interaction graph of internalizing coping

(F) Alternative graph of internalizing coping

Fig. 3. The interaction between perceived victimization and coping strategies on psychological distress.

Results showed that the interaction between peer victimization and distancing coping strategies was not a significant predictor of adolescent psychological distress. In contrast, results showed that the interaction between peer victimization and internalizing coping was significant. As depicted in Fig. 3E, the association between victimization and psychological distress was stronger for adolescents who used more internalizing coping ($b = 0.45$, $SE = 0.04$, $p < 0.001$), compared to those who used less internalizing coping ($b = 0.20$, $SE = 0.04$, $p < 0.001$). An alternative presentation of this interaction effect is also shown in Fig. 3F. Simple slopes revealed that the association between internalizing coping and psychological distress was stronger for adolescents with higher levels of victimization ($b = 0.25$, $SE = 0.04$, $p < 0.001$), compared to those with lower levels of victimization ($b = -0.01$, $SE = 0.03$, $p = 0.84$).

4. Discussion

The current study examined the moderating effects of coping strategies on the association between perceived peer victimization and psychological distress, including depression and loneliness, using a Taiwanese adolescent sample. The results indicated that both support seeking strategies and problem-solving strategies buffered adolescents from loneliness and depression. Internalizing coping strategies, on the other hand, placed Taiwanese adolescents at great risk of depression and loneliness. Support seeking strategies that are aligned with interdependent cultural contexts showed relatively greater buffering effects than the culturally non-normative problem-solving strategies for adolescents who perceived high levels of victimization. Fig. 3A showed that the psychological distress

of adolescents who perceived high levels of victimization went below zero when they endorsed high support seeking coping strategies. Fig. 3B and D also showed that, for adolescents who perceived high levels of victimization, the slope (the buffering effects) of seeking support strategies was steeper than that of problem-solving strategies ($p < 0.001$, Andrade & Estévez-Pérez, 2014). This result partially supported our research hypothesis on the basis of person-context fit theory (Magnusson & Stattin, 1998), stating that culturally-normative coping strategies (i.e., support-seeking strategies) may be more beneficial to Taiwanese adolescents compared to the culturally non-normative coping strategy (i.e., problem-solving strategies), although problem-solving coping strategies were not negative coping strategies as we previously hypothesized. In this section, we first discuss our findings in relation to the previous research and then discuss the implications for school psychologists and intervention and prevention programs.

4.1. The moderation effects of coping strategies on adolescent adjustments

The finding that support-seeking strategies protected adolescents from psychological distress is consistent with previous literature (e.g., Kochenderfer-Ladd & Skinner, 2002; Zimmer-Gembeck & Skinner, 2008). However, the fact that support-seeking strategies have greater buffering effects from psychological distress than the problem-solving strategies for adolescents who perceived high levels of victimization sends a message for educators in Taiwan and those who work with Taiwanese immigrants in the K-12 school system. When real-life peer victimization was assessed in Taiwan, a much higher rate of adolescents said they seek support from adults, peers, and parents when they were victimized compared to U.S. adolescents (i.e., 41% versus 18%, Ma & Bellmore, 2016). This rate indicates that Taiwanese adolescents heavily relied on support-seeking strategies to solve the interpersonal distress they encounter. Coping in ways consistent with the coping norm in a given culture invited more positive adjustment outcomes (Kochenderfer-Ladd & Skinner, 2002; Magnusson & Stattin, 1998). For Taiwanese adolescents in particular, seeking help from friends or the adults was conducive to positive adjustment because this strategy enabled a sense of interpersonal connection and reassurance of psychological safety following a victimization event (Ma & Bellmore, 2016).

Other research has indicated that adolescent victims' adjustment is dependent upon the responsiveness of the adults and friends from whom they seek support (Jones, Mitchell, & Turner, 2015; Sainio, Veenstra, Huitsing, & Salmivalli, 2010). In addition, Taiwanese adolescents who experienced victimization and who were helped by teachers, parents, or friends also adjusted better than non-helped victims, reporting lower depression, anxiety, and loneliness (Ma & Chen, 2017). That said, it remains unclear the extent to which Taiwanese adolescents' peers, school teachers, and parents are well-equipped with proper skills to help the victims. The buffering effects of seeking social support can be optimized only if peer bystanders and school adults recognize the importance they play in victims' adjustment and are well-trained with skills and strategies to help adolescent victims.

The moderation effects of problem-solving coping were inconsistent with our research hypothesis since it did not exacerbate adolescents' psychological adjustment, despite problem-solving strategies being culturally non-normative. Rather, it lessened the psychological adjustment particularly for adolescents who perceived middle to high levels of peer victimization, although to a lesser extent compared to that of support seeking strategies. When the perceived levels of victimization were low, the endorsement of such strategies was neither helpful nor detrimental. Previous research showed Asian adolescents utilized less problem-solving strategies as a result of interdependent self-construal (Lam & Zane, 2004), and that problem-focused coping did not buffer Asian American students from negative adjustment given that it was culturally-atypical (Jose & Schurer, 2010). Yet, the results of the current study were more in line with the study results conducted in the Western society showing its positive buffering effects (e.g., Hampel et al., 2009; Singh & Bussey, 2011). This result indicated that, for adolescents who perceived themselves to be highly victimized, trying some strategies of problem-solving in response to peer victimization, albeit it being culturally atypical, was better than trying no strategies to solve one's own problem. This result is promising given it demonstrated a variety of strategies that highly victimized adolescents may utilize to lessen psychological distress in addition to the endorsement of culturally-normative coping such as support-seeking strategies (Compas et al., 2012).

On the other hand, internalizing coping seems to be a rather maladaptive coping strategies for adolescent victims because cross-cultural research on peer victimization consistently shows that internalizing coping strategies placed adolescent victims at greater psychological distress (Jose, Kramar, & Hou, 2014; Jose & Schurer, 2010). A previous study suggested that internalizing coping was more prevalently endorsed in East-Asian population, and therefore may be endorsed as cultural-congruent coping strategy that could have buffering effects on psychological distress (Jose & Huntsinger, 2005). We contend that it is less the case in perceived peer victimization and that internalizing coping strategies are a rather maladaptive response for adolescents to endorse for two reasons: First, we believe that the buffering effects may only work as a buffer in a once-in-a-lifetime stressor such as a parents' divorce, as assessed in Jose and Huntsinger' (2005) study, which may be very different in quality from a stressor such as perceived peer victimization which might happen on a regular basis whenever a victim was in school (e.g., Kochenderfer-Ladd & Skinner, 2002).

In this case, internalizing coping may be useless in buffering the victims from psychological distress on a daily basis since it did not result in any concrete help from the external world such as a teacher, other adults, or friends. Second, internalizing coping was not found to be more prevalently endorsed by Asian adolescents once researchers controlled for the cross-cultural equivalence in terms of factor loading and item intercepts of the coping scale (i.e., measurement invariance). The studies that showed East Asian populations using more internalizing coping strategies have not examined measurement invariance on the coping scale (e.g., Jose & Huntsinger, 2005). In contrast, when the rigorous measurement invariance model was examined, Ma and Bellmore (2016) found that the original significant association between East Asian adolescents and the endorsement of internalizing coping changed to be non-significant.

4.2. Implications for school psychologists

A peak into recent literature revealed that school teachers often showed low awareness in identifying adolescents who suffered peer victimization (especially those who suffered relational victimization); there is also an absence of research investigating how school adults address all forms of peer victimization (Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009; Puhl, Peterson, & Luedicke, 2013). Assessing how peers, teachers, and parents respond to victims' distress and knowing what they need to learn to more effectively help victims cope with perceived victimization is an imminent issue for adolescent research in Taiwan and the culturally similarly adjacent East Asian school contexts. Meanwhile, current prevention and intervention efforts in Taiwan give little consideration of the roles of peer bystanders. Particular efforts are needed to include peer bystanders and school teachers in Taiwan to identify peer victims in distress and learn what they can do to make victims feel better and cope effectively with peer victimization. For example, the Finish KIVA prevention program that turned prosocial and popular bystanders into active helpers and friends has shown promising results (Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996). It is possible that the effects of such an approach will be particularly strong in school contexts where victims seeking social support are the coping norm. In addition, a peer-support system and befriending intervention strategies may also be pragmatic for Taiwanese adolescents or for educators who work with Taiwanese immigrants under peer distress (Schwartz, Kelly, Duong, & Badaly, 2010).

Our results showing that support-seeking strategies may have greater buffering effects than problem-solving strategies for adolescents who perceived high levels of victimization had implications for intervention and prevention programs. At the prevention stage, educators may emphasize the effectiveness of culturally normative coping strategies (i.e., social support seeking) given its greater buffering effects for self-perceived victims. At the intervention stage where frequent victims are identified, educators may recognize the benefits of utilizing both problem-solving strategies and social support seeking strategies. Redirecting victims who perceived themselves to be highly victimized to these two strategies may enable the benefits from a variety of coping strategies. Given not all positive coping strategies recorded in Western Societies buffer adolescents from psychological distress to the same great extent, it is important for prevention practitioners to be careful in adapting prevention programs that promote positive coping developed in a different cultural context from their own. Extra attention should be given to keep strategies that are congruent with a given cultural values and to carefully introduce strategies that are culturally-atypical (Fig. 3B revealed a slight, yet non-significance raise in psychological distress for non-victimized adolescents who endorsed high problem solving strategies).

The last point worth mentioning is that the effects of coping strategies may also be dependent on the type of victimization. Kanetsuna et al. (2006) found that the recommended coping strategies by Japanese adolescents tended to vary based on the types of victimization. A high portion of Japanese adolescents recommended seeking help in the incidence of social exclusion, whereas taking direct action against the perpetrator was equally recommended as a strategy as support-seeking in the episode of physical victimization. Ma and Chen (2017) found that fewer peers were willing to help in the episode of social exclusion compared to physical victimization. It is likely that the effectiveness of the support-seeking strategy in buffering depression works better in physical versus relational victimization. The coping strategies measured in this study are in response to a scenario of physical victimization. Hence, our results should be interpreted with caution and may not be generalized to other types of victimization. To date, few studies separated the examination of moderation by types of victimization. Thus, we urge future researchers to also examine the moderation effects of coping by types of victimization to differentiate the effects.

4.3. Limitations and Future Research

Despite the contributions of the current study, it has several limitations. First, our study used a cross sectional sample with a correlational research design which makes the causal inference impossible. It is likely that adolescents who adjusted well tend to have a larger pool of friends and connections with adults, and therefore they are more likely to seek social support. Future studies should consider utilizing longitudinal data or control for the number of friends that victims have in assessing the moderation effects of coping.

Second, the current study used self-reports to measure adolescent coping strategies, perceived peer victimization, and psychological distress of loneliness and depression. The lack of multiple informants of peer victimization and psychological distress of loneliness and depression may result in common method variance. For example, it is possible that adolescents who tend to endorse seeking social support also tend to perceive themselves as having fewer psychological distress issues. Previous research suggests that adolescents' subjective experiences matter most to perceived psychological distress (Scholte, Burk, & Overbeek, 2013) while other studies question if adolescents are accurate reporters of their own depression given only modest correlations were found between adolescents' self-reported depressive symptoms and those of other informants, such as parents (De Los Reyes et al., 2015; Rescorla et al., 2013). In addition, the depression scale (CDI short form) included in this study is a screening tool instead of an exhaustive list of the measure for the depressive symptoms (i.e., CDI2). The results may either over- or under- interpret adolescents' psychological distress. Future researchers should consider using multiple informants of adolescent coping strategies, peer victimization, and psychological maladjustment indices to increase the generalizability of the results and examine if the moderation effects remain strong. Future studies may also consider using the original CDI2 inventory which more accurately capture adolescents' depressive symptoms.

Third, our study did not include a comparison group from the independent cultures of Western societies to compare the moderation effects of problem-solving strategies. It is possible that problem-solving strategies may not work well for victimized adolescents regardless of cultural contexts, since it may not be easy for peer victims to come up with a useful solution on their own, given the power differential status that may be involved between the bully perpetrator and the victim. Kochenderfer-Ladd and Skinner (2002) used a U.S. children's sample and found that problem-solving strategies buffer non-victimized children from anxiety but not

for highly victimized children. Future studies are needed to differentiate the moderation effects of coping with different levels of perceived peer victimization, and ideally, by drawing from adolescents of different cultures. Though our study did not include an adolescent sample from the independent cultural context as a contrast, the results still represent evidence that a problem-solving strategy is not effective in promoting victims' adjustment for Taiwanese adolescents and may even be considered a negative strategy given that high endorsement of problem-solving is associated with high depression across both victim and non-victim adolescents.

Fourth, although the sample size is relative large, it is drawn from a single grade in a single school, which inadvertently limits the generalizability of our findings even within the Taiwanese adolescent population. Future research should consider drawing Taiwanese samples that vary in socioeconomic status, grade, disability level, and school size to see if the results remain similar. We also urge caution in interpreting our results given the lower-than-normal reliability of the peer victimization measure ($\alpha = 0.60$) in the current study, although a slightly higher alpha was recorded for girls ($\alpha = 0.65$) than for boys ($\alpha = 0.55$). The original victimization scale was developed based on a sample of 60 middle school girls in Ireland (Neary & Joseph, 1994), which may explain why the scales have a better reliability in adolescent girls as opposed to boys in this study. Alternatively, the low alpha is likely due to the different definitions Taiwanese adolescents assign across different victimization types (Wei et al., 2007). Future research may examine the gender differences in moderation effects on perceived peer victimization, and may be devoted to developing culturally-specific measure of victimization for Chinese speaking adolescent population.

Our study demonstrated that an effective coping strategy is not a concept that holds constant across adolescent populations, given that the effects of coping strategies may be dependent on the behavioral norm of a given context. Since peer victimization studies have just started to gain focus in East Asian countries, our study serve as a pioneer framework for East Asian educators and researchers to design cultural-congruent practices for adolescents to thrive within their psychological, social, and interpersonal well-being.

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Appendix A. The scale items for coping strategies measure organized by factors

No.	Items from the coping scales
	Seeking social support
	(a) Adult Support Seeking
1	Talk to my parents about it
2	Ask a teacher for advice
3	Ask my parents for help
4	Get help from a teacher
5	Talk to the teacher about it
6	Ask my parents for advice
	(b) Peer support seeking
7	Tell a friend what happened
8	Get help from a friend
9	Ask a friend for a advice
10	Talk to somebody about how this made me feel
	Problem-solving
11	Try to think of different ways to solve the situation
12	Change something about the situation so that things would work out
13	Decide on one way to deal with the problem and do it
14	Do something to make up for it
15	Know there are things I can do to make it better
16	Go over in my mind what to do or say
17	Try to understand why this happened to me
18	Try extra hard to keep this from happening again
	Distancing
19	Forget the whole thing
20	Tell myself it doesn't matter
21	Refuse to think about it
22	Say I don't care
23	Ignore it when people mention it later
24	Make believe nothing happened
	Internalizing
25	Go off by myself

26	Become so upset that I can't talk to anyone
27	Worry too much about it
28	Cry about it
29	Just feel sorry for myself
30	Worry that others will think badly of me
31	Get mad at myself for doing something I shouldn't have done.

Appendix B. Mplus syntax of the Latent Moderation Model

The Mplus Syntax for the Latent Moderation Model. The same syntax can be used for different moderators.

```
DATA:
   FILE IS taiwanmplus.dat;

VARIABLE:
   NAMES ARE
   gender ETH T_SA T_SF T_PS T_DIS T_INT PBUL PVIC EMP LONEL ANX
   DEPR AGEGOAL COMGOAL SCHBEL SCHFAIR TEASUP SCHSAFE PBUL_mean
PVIC_mean
   T_SA_mean T_SF_mean T_PS_mean T_DIS_mean T_INT_mean devSA devSF
   devPS devDIS devINT devPVIC PVxSA PVxSF PVxPS PVxDIS PVxINT  H3 H6 H15 H16r ;

   Missing are all (999) ;

   USEVARIABLES ARE
   T_PS LONEL DEPR gender PVIC;

ANALYSIS:
   TYPE IS RANDOM;
   ALGORITHM = INTEGRATION;
   ESTIMATOR IS ML;
   PROCESSORS = 4;
   MITERATIONS = 100000;
   STARTS = 10 2;

MODEL:

   !Latent Variables
   vic BY PVIC*.3;
   pro BY T_PS*;
   psy BY LONEL DEPR;

!Constraining the residual variances of the single-indicators according to apriori reliability alphas.
The constrained values is obtained by (1- alpha)*indicator variance.

   T_PS@.0884;
   PVIC@.1216;

   !Standardizing the latent predictors
   vic@1  pro@1;
   !Create latent interactions
    vic_pro | vic XWITH pro;

   !Structural path
   psy on gender;
   psy ON vic (b1);
   psy ON pro ;
   psy on vic_pro (b3);

   gender with vic pro;

   !Probing simple slopes
   MODEL CONSTRAINT:

      NEW(LOW_W MED_W HIGH_W eff_LOWW eff_MEDW eff_HIW);

      LOW_W = -1;   ! -1 SD below mean value of W
      MED_W = 0;      ! mean value of W
      HIGH_W = 1;   ! +1 SD above mean value of W

      eff_LOWW = b1 + b3*LOW_W;
      eff_MEDW = b1 + b3*MED_W;
      eff_HIW =  b1 + b3*HIGH_W;

   OUTPUT: STDYX;
```

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Thousand Oaks, CA: Sage.

Aldwin, C. M. (2007). *Stress, coping, and development: An integrative perspective* (2nd ed.). New York, NY: Guilford Press.

Andrade, J. M., & Estévez-Pérez, M. G. (2014). Statistical comparison of the slopes of two regression lines: A tutorial. *Analytica Chimica Acta, 8381*(12), https://doi.org/10.1016/j.aca.2014.04.057.

Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology, 53*(4), 500–505. https://doi.org/10.1037/0022-006X.53.4.500.

Bellmore, A. D., Witkow, M. R., Graham, S., & Juvonen, J. (2004). Beyond the individual: The impact of ethnic context and classroom behavioral norms on victims' adjustment. *Developmental Psychology, 40*(6), 1159–1172. https://doi.org/10.1037/0012-1649.40.6.1159.

Ben-Zur, H. (2005). Coping, distress, and life events in a community sample. *International Journal of Stress Management, 12*(2), 188–196. https://doi.org/10.1037/1072-5245.12.2.188.

Brislin, R. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185–216. https://doi.org/10.1177/135910457000100301.

Causey, D. L., & Dubow, E. F. (1992). Development of a self-report coping measure for elementary school children. *Journal of Clinical Child Psychology, 21*(1), 47–59.

Chan, D. W. (1997). Depressive symptoms and perceived competence among Chinese secondary school students in Hong Kong. *Journal of Youth and Adolescence, 26*(3), 303–319. https://doi.org/10.1007/s10964-005-0004-4.

Child Welfare League Foundation of Taiwan (2014). The investigation report of school bullying in Taiwan. Retrieved from http://www.children.org.tw.

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*(1), 87–127. https://doi.org/10.1037/0033-2909.127.1.87.

Compas, B. E., Jaser, S. S., Dunn, M. J., & Rodriguez, E. M. (2012). Coping with chronic illness in childhood and adolescence. *Annual Review of Clinical Psychology, 8*, 455–480. https://doi.org/10.1146/annurev-clinpsy-032511-143108.

De Los Reyes, A., Augenstein, T. M., Wang, M., Thomas, S. A., Drabick, D. A. G., Burgers, D. E., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin, 141*(4), 858–900. https://doi.org/10.1037/a0038498.

Endler, N. S., & Parker, J. D. A. (1990). State and trait anxiety, depression and coping styles. *Australian Journal of Psychology, 42*(2), 207–220. https://doi.org/10.1080/00049539008260119.

Flaspohler, P. D., Elfstrom, J. L., Vanderzee, K. L., Sink, H. E., & Birchmeier, Z. (2009). Stand by me: The effects of peer and teacher support in mitigating the impact of bullying on quality of life. *Psychology in the Schools, 46*(7), 636–649. https://doi.org/10.1002/pits.20404.

Grant, K. E., Compas, B. E., Thurm, A. E., McMahon, S. D., Gipson, P. Y., Campbell, A. J., ... Westerholm, R. I. (2006). Stressors and child and adolescent psychopathology: Evidence of moderating and mediating effects. *Clinical Psychology Review, 26*(3), 257–283. https://doi.org/10.1016/j.cpr.2005.06.011.

Hampel, P., Manhal, S., & Hayer, T. (2009). Direct and relational bullying among children and adolescents: Coping and psychological adjustment. *School Psychology International, 30*(5), 474–490. https://doi.org/10.1177/0143034309107066.

Hayduk, L. A. (1996). *LISREL issues, debates, and strategies.* Baltimore, MD: Johns Hopkins University Press.

Hayduk, L. A., & Littvay, L. (2012). Should researchers use single indicators, best indicators, or multiple indicators in structural equation models? *BMC Medical Research Methodology, 12*(1), 159. https://doi.org/10.1186/1471-2288-12-159.

Hayduk, L. A., & Pazderka-Robinson, H. (2007). Fighting to understand the world causally: Three battles connected to the causal implications of structural equation models. In W. Outhwaite, & S. Turner (Eds.). *Sage handbook of social science methodology* (pp. 147–171). London, England: Sage.

Herge, W. M., La Greca, A. M., & Chan, S. F. (2016). Adolescent peer victimization and physical health problems. *Journal of Pediatric Psychology, 41*(1), 15–27. https://doi.org/10.1093/jpepsy/jsv050.

Hu, L.-T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3*(4), 424–453. https://doi.org/10.1037/1082-989X.3.4.424.

Jackson, D. L. (2003). Revisiting sample size and number of parameter estimates: Some support for the N:q hypothesis. *Structural Equation Modeling: A Multidisciplinary Journal, 10*(1), 128–141. https://doi.org/10.1207/S15328007SEM1001_6.

Jones, L. M., Mitchell, K. J., & Turner, H. A. (2015). Victim reports of bystander reactions to in-person and online peer harassment: A national survey of adolescents. *Journal of Youth and Adolescence, 44*, 2308–2320. https://doi.org/10.1007/s10964-015-0342-9.

Jose, P. E., & Huntsinger, C. S. (2005). Moderation and mediation effects of coping by Chinese American and European American adolescents. *Journal of Genetic Psychology, 166*(1), 16–43. https://doi.org/10.3200/GNTP.166.1.16-44.

Jose, P. E., Kramar, K., & Hou, Y. (2014). Does brooding rumination moderate the stress to depression relationship similarly for Chinese and New Zealand Adolescents? *Australian Journal of Educational and Developmental Psychology, 4*(1), 114–127.

Jose, P. E., & Schurer, K. (2010). Cultural differences in coping among New Zealand adolescents. *Journal of Cross-Cultural Psychology, 41*(1), 3–18. https://doi.org/10.1177/0022022109348783.

Kagitcibasi, C. (2007). *Family, self, and human development across cultures: Theory and applications* (2nd ed.). Mahwah, NJ: Erlbaum.

Kanetsuna, T., Smith, P. K., & Morita, Y. (2006). Coping with bullying at school: Children's recommended strategies and attitudes to school-based interventions in England and Japan. *Aggressive Behavior, 32*(6), 570–580. https://doi.org/10.1002/ab.20156.

Kindermann, T. A., & Valsiner, J. (1995). *Development of person-context relations.* Hillsdale, NJ: Erlbaum.

Klein, A., & Moosbrugger, H. (2000). Maximum likelihood estimation of latent interaction effects with the LMS method. *Psychometrika, 65*(4), 457–474. https://doi.org/10.1007/BF02296338.

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: Guilford Press.

Kochenderfer-Ladd, B. (2004). Peer victimization: The role of emotions in adaptive and maladaptive coping. *Social Development, 13*(3), 329–349. https://doi.org/10.1111/j.1467-9507.2004.00271.x.

Kochenderfer-Ladd, B., & Skinner, K. (2002). Children's coping strategies: Moderators of the effects of peer victimization? *Developmental Psychology, 38*(2), 267–278. https://doi.org/10.1037/0012-1649.38.2.267.

Lam, A. G., & Zane, N. W. S. (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology, 35*(4), 446–459. https://doi.org/10.1177/0022022104266108.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* New York, NY: Springer.

Lerner, J. V., & Lerner, R. M. (1983). Temperament and adaptation across life: Theoretical and empirical issues. In P. B. Baltes, & O. G. Brim (Eds.). *Life-span development and behavior* (pp. 197–230). New York, NY: Academic Press.

Ma, T.-L., & Bellmore, A. (2016). Connection or independence: Cross-cultural comparisons of adoelscents' coping with peer victimization using mixed methods. *Journal of Cross-Cultural Psychology, 47*(1), 109–130. https://doi.org/10.1177/0022022115605386.

Ma, T.-L., & Chen, W.-T. (2017). The benefits of being defended: Perceived bystander participant roles and victims' emotional and psychosocial adjustment. *Journal of School Violence,* 1–15. https://doi.org/10.1080/15388220.2017.1387132.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130–149. https://doi.org/10.1037/1082-989X.1.2.130.

Magnusson, D., & Stattin, H. (1998). Person-context interaction theories. In W. Damon, & R. M. Lerner (Eds.). *Handbook of child psychology. Volume 1. Theoretical models of human development* (pp. 685–795). New York, NY: John Wiley & Sons.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224.

Maslowsky, J., Jager, J., & Hemken, D. (2015). Estimating and interpreting latent variable interactions: A tutorial for applying the latent moderated structural equations method. *International Journal of Behavioral Development, 39*(1), 87–96. https://doi.org/10.1177/0165025414552301.

McWilliams, L. A., Cox, B. J., & Enns, M. W. (2003). Use of the coping inventory for stressful situations in a clinically depressed sample: Factor structure, personality

correlates, and prediction of distress. *Journal of Clinical Psychology, 59*(4), 423–437. https://doi.org/10.1002/jclp.10080.
Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus user's guide* (8th ed.). Los Angeles, CA: Muthén & Muthén.
National Bureau of Statistics of Taiwan (2017). Population and housing census. Retrieved from http://eng.stat.gov.tw/np.asp?ctNode=1549.
Neary, A., & Joseph, S. (1994). Peer victimization and its relationship to self-concept and depression among schoolgirls. *Personality and Individual Differences, 16*(1), 183–186. https://doi.org/10.1016/0191-8869(94)90122-8.
O'Connor, B. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*(3), 396–402. https://doi.org/10.3758/BF03200807.
Park, J., Kitayama, S., Karasawa, M., Curhan, K., Markus, H. R., Kawakami, N., ... Ryff, C. D. (2013). Clarifying the links between social support and health: Culture, stress, and neuroticism matter. *Journal of Health Psychology, 18*(2), 226–235. https://doi.org/10.1177/1359105312439731.
Puhl, R. M., Peterson, J. L., & Luedicke, J. (2013). Strategies to address weight-based victimization: Youths' preferred support interventions from classmates, teachers, and parents. *Journal of Youth and Adolescence, 42*(3), 315–327. https://doi.org/10.1007/s10964-012-9849-5.
Rescorla, L. A., Ginzburg, S., Achenbach, T. M., Ivanova, M. Y., Almqvist, F., Begovac, I., ... Verhulst, F. C. (2013). Cross-informant agreement between parent-reported and adolescent self-reported problems in 25 societies. *Journal of Clinical Child and Adolescent Psychology, 42*(2), 262–273. https://doi.org/10.1080/15374416.2012.717870.
Rohde, P., Lewinsohn, P. M., Tilson, M., & Seeley, J. R. (1990). Dimensionality of coping and its relation to depression. *Journal of Personality and Social Psychology, 58*(3), 499–511. https://doi.org/10.1037/0022-3514.58.3.499.
Roth, S., & Cohen, L. J. (1986). Approach, avoidance, and coping with stress. *American Psychologist, 41*(7), 813–819. https://doi.org/10.1037//0003-066X.41.7.813.
Sainio, M., Veenstra, R., Huitsing, G., & Salmivalli, C. (2010). Victims and their defenders: A dyadic approach. *International Journal of Behavioral Development, 35*(2), 144–151. https://doi.org/10.1177/0165025410378068.
Salmivalli, C., Lagerspetz, K., Bjorkqvist, K., Osterman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive Behavior, 22*(1), 1–15. https://doi.org/10.1002/(SICI)1098-2337(1996)22:1<1::AID-AB1>3.0.CO;2-T.
Sardeshmukh, S. R., & Vandenberg, R. J. (2016). Integrating moderation and mediation: A structural equation modeling approach. *Organizational Research Methods,* 1–25. https://doi.org/10.1177/1094428115621609.
Scholte, R. H., Burk, W. J., & Overbeek, G. (2013). Divergence in self- and peer-reported victimization and its association to concurrent and prospective adjustment. *Journal of Youth and Adolescence, 42*(12), 1789–1800. https://doi.org/10.1007/s10964-012-9896-y.
Schwartz, D., Kelly, B. M., Duong, M. T., & Badaly, D. (2010). A contextual perspective on intervention and prevention efforts for bully-victim problems. In E. M. Vernberg, & B. K. Biggs (Eds.). *Preventing and treating bullying and victimization* (pp. 17–44). New York, NY: Oxford University Press.
Shen, Y. E. (2009). Relationships between self-efficacy, social support and stress coping strategies in Chinese primary and secondary school teachers. *Stress and Health, 25*(2), 129–138. https://doi.org/10.1002/smi.1229.
Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin, 20*(5), 580–591. https://doi.org/10.1177/0146167294205014.
Singh, P., & Bussey, K. (2011). Peer victimization and psychological maladjustment: The mediating role of coping self-efficacy. *Journal of Research on Adolescence, 21*(2), 420–433. https://doi.org/10.1111/j.1532-7795.2010.00680.x.
Sitarenios, G., & Kovacs, M. (1999). Use of the children's depression inventory. In M. E. Maruish (Ed.). *The use of psychological testing for treatment planning and outcomes assessment* (pp. 267–298). (2nd ed.). Mahwah, NJ: Erlbaum.
Smith, P. K., & Brain, P. (2000). Bullying in schools: Lessons from two decades of research. *Aggressive Behavior, 26*(1), 1–9. https://doi.org/10.1002/(SICI)1098-2337(2000)26:1<1::AID-AB1>3.0.CO;2-7.
Smith, P. K., Morita, Y., Junger-Tas, J., Olweus, D., Catalano, R., & Slee, P. (1999). *The nature of school bullying: A cross-national perspective.* New York, NY: Routledge.
Stapinski, L. A., Araya, R., Heron, J., Montgomery, A. A., & Stallard, P. (2015). Peer victimization during adolescence: Concurrent and prospective impact on symptoms of depression and anxiety. *Anxiety, Stress, and Coping, 28*(1), 105–120. https://doi.org/10.1080/10615806.2014.962023.
Stormshak, E. A., Bierman, K. L., Bruschi, C., Dodge, K. A., Coie, J. D., & the Conduct Problems Prevention Research Group (1999). The relation between behavior problems and peer preference in different classroom contexts. *Child Development, 70*(1), 169–182. https://doi.org/10.1111/1467-8624.00013.
Sugimura, N., Rudolph, K. D., & Agoston, A. M. (2014). Depressive symptoms following coping with peer aggression: The moderating role of negative emotionality. *Journal of Abnormal Child Psychology, 42*(4), 563–575. https://doi.org/10.1007/s10802-013-9805-1.
Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review, 96*(3), 506–520. https://doi.org/10.1037/0033-295X.96.3.506.
Undheim, A. M., & Sund, A. M. (2010). Prevalence of bullying and aggressive behavior and their relationship to mental health problems among 12- to 15-year-old Norwegian adolescents. *European Child & Adolescent Psychiatry, 19*(11), 803–811. https://doi.org/10.1007/s00787-010-0131-7.
Wang, X., Hu, X., & Shen, J. (2011). Affection of left children's friendship quality on loneliness and depression. *Chinese Journal of Clinical Psychology, 19*(2), 252–254.
Wei, H.-S., Jonson-Reid, M., & Tsao, H.-L. (2007). Bullying and victimization among Taiwanese 7th graders: A multi-method assessment. *School Psychology International, 28*(4), 479–500. https://doi.org/10.1177/0143034307084137.
Yeh, C., & Inose, M. (2002). Difficulties and coping strategies of Chinese, Japanese, and Korean immigrant students. *Adolescence, 37*(145), 69.
Zhang, W., Chen, L., Ji, L., Zhang, L., Chen, G., & Wang, S. (2009). Physical and relational victimization, and children's emotional adjustment in middle childhood. *Acta Psychologica Sinica, 41*, 433–443.
Zimmer-Gembeck, M. J., & Skinner, E. A. (2008). Adolescents coping with stress: Development and diversity. *Prevention Researcher, 15*(4), 3–7.