Relational and physical victimization, friendship, and social and school adjustment in Taiwan

Yoshito Kawabata¹ and Wan-Ling Tseng²

Abstract
This short-term longitudinal study examined the differential pathways from relational and physical victimization to internalizing and externalizing problems and academic achievement as well as the roles of friendships and friendship quality in these pathways with a Taiwanese sample (N = 471; 53.3% boys; mean age = 9.95 years). A multi-informant approach was used to collect the data. Relational and physical victimization and the number of friendships were assessed via peer nominations. Adjustment problems, achievement, and friendship quality were measured by mother, teacher, and child reports, respectively. Results of Structural Equation Modeling showed that the paths from relational victimization to adjustment problems were indirectly influenced by positive or negative friendship quality. Specifically, relational victimization was associated with negative friendship quality indexed by high levels of exclusivity and conflict, which in turn resulted in more severe internalizing and externalizing adjustment problems 6 months later. Lower levels of relational victimization were linked to positive friendship quality indexed by high levels of companionship, help, closeness, and intimacy, which in sequence contributed to better academic achievement. These indirect effects were not evidenced for the number of friendships or the paths from physical victimization to adjustment problems and achievement. There were no gender differences in the measurement or structural part of the model. These findings are discussed from developmental, social, and cultural perspectives.

Keywords
Achievement, culture, friendship, psychopathology, relational victimization

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An increasing number of children experience victimization by peers at school. Peer victimization is now global and frequently occurs across cultures. As such, the role of positive and negative peer socialization on child development has gained greater international attention to researchers, educators, clinicians, and policymakers. Peer victimization includes both physical forms (i.e., being hit, kicked, and punched) and other forms that are nonphysical (i.e., indirect, social, and relational victimization—silent treatment, exclusion from the peer group, and the manipulation of friendships; Bjorkqvist, Ekman, & Lagerspetz, 1982; Crick & Grotpeter, 1996; Underwood, 2003). To date, relational and physical victimization have been shown to be associated with social and school adjustment problems, ranging from increased aggression, anxiety-depression, and withdrawal to lowered academic participation and performance (Casper & Card, 2017; Cook, Williams, Guerra, Kim, & Sadek, 2010; Nakamoto & Schwartz, 2010).

Despite the established link between forms of peer victimization and social and school adjustment problems, studying relational victimization across/within different cultures is still in its beginning stage. In a review of peer victimization, Ostrov and Kamper (2015) suggest that the role of culture when assessing the different forms of peer victimization needs to be fully examined to extend the applicability of Western studies to a non-Western cultural context. Causadias (2013) also proposes that cultural factors, such as cultural beliefs and values should be incorporated into the study of children’s mental health problems to better understand their developmental origins and processes among cultural and ethnic groups. These emerging bodies of knowledge on culture, development, and psychopathology highlight the importance of examining cross, context, and cultural variations in the link between forms of peer victimization and adjustment.

Kawabata, Crick, and Hamaguchi (2010) indicate that peer victimization, particularly relational victimization may be a robust risk factor for mental health problems among children and adolescents in Asian cultures. One mechanism behind this view is that Asian children, who place more emphasis on relational interdependence, may regard peer groups and friendships as an important part of themselves. When these children experience negative interpersonal peer-oriented problems, they may be more cognitively and emotionally vulnerable than children from cultures that emphasize independence. In fact, both perpetrators and victims of relational aggression (but not physical aggression) tend to develop greater levels of mental health problems in Asian cultures (Kawabata, Crick, & Hamaguchi, 2013; Kawabata, Tseng, Murray-Close, & Crick, 2012) and this maladaptive process seems to be more pronounced among children who form conflictual friendships (Kawabata, Crick, & Hamaguchi, 2010). Given that children in Asian cultures such as Taiwan generally are collectivistic, peer groups and friendships likely play a strong role in their peer socialization (Chen, 2012). The present study examined the common and unique pathways from relational and physical victimization to social and school adjustment problems as well as the roles of the number and quality of friendship in these paths among Taiwanese children. The goal of this study is to understand intra-cultural differences (not cross-cultural differences) in the linkages among forms of peer victimization, friendships, and mental health problems. This study did not entail a direct comparison of data from multiple cultural contexts.
The associations between relational and physical victimization and adjustment

Physical victimization has received extensive research attention and been shown to be a concurrent and long-term risk factor for social-psychological adjustment problems, including peer rejection, isolation from the peer group, the involvement in the gang, and internalizing and externalizing symptoms (Card & Hodges, 2008; Cook et al., 2010). A relational form of victimization in particular has been found to be similarly as well as uniquely associated with a host of social and school problems (Casper & Card, 2017; Crick & Grotaper, 1996). Relational victimization is a risk factor for internalizing and externalizing behaviors, and this finding seems to be above and beyond the contribution of physical victimization (Crick & Bigbee, 1998; Cullerton-Sen & Crick, 2005). Physical victimization has been found to be associated with physical aggression, delinquent behaviors, and substance use particularly for boys, whereas relational victimization has been predictive of physical aggression and substance use for girls (Sullivan, Farrell, & Kliwer, 2006). Furthermore, Rosen et al. (2009) showed a longitudinal effect of social victimization on elevated levels of internalizing symptoms. Converging findings across studies suggest that peer victimization have shared unique consequences, depending on its form, its outcome, and the gender of the child.

The negative effect of relational and physical victimization seems to spread over to the academic domain. A recent meta-analytic review documented that peer victimization is associated with poor academic achievement (Nakamoto & Schwartz, 2010). Another study indicates that relative to non-victims, victimized children displayed lower grades, motivation, and participation rates (Cook et al., 2010). Peer victimization has been shown to be a risk factor for degrading social status (poorer peer acceptance and popularity), lowering self-esteem, and developing interpersonally oriented depressive symptoms (Cook et al., 2010; Rose & Rudolph, 2006). Thus, victimized children may fail to focus on studying, lose motivation for learning, and simultaneously miss opportunities to participate in class activities, discussions, and educational interactions with peers. In support of this finding, physical and verbal victimization have been predictive of more school avoidance and peer exclusion, a component of relational victimization, and led to less classroom engagement and poorer academic achievement through early and middle childhood (Buhs, Ladd, & Herald, 2006). These findings are consistent. However, their effect sizes were rather small ($r$ ranged from $-.04$ to $.14$), suggesting that there may be other factors, such as friendships, that account for the link between victimization and achievement.

The roles of number and quality of friendships

Friendships, defined as social ties that are close, equal, and mutual in nature, become developmentally more salient when children grow older (Hartup & Stevens, 1997). Children in late childhood and adolescence spend less time with their parents and increase shared time with their peers and friends (Bagwell & Schmidt, 2011a). Older children place more emphasis on the quality of friendships than the number of friendships and view friendships as becoming a more important part of their lives (Berndt, 2002). Younger children may have a lot of “friends,” but they tend to select their best
friends or use a smaller peer group as a niche place at a later developmental stage (Bagwell & Schmidt, 2011a). Thus, both number and quality of friendships are reliable and valid indicators of friendships for school-aged children.

Children can learn socially appropriate behaviors and develop social cognition and emotion regulation through daily interactions with their friends (Berndt, 2002). Due to behavioral characteristics (being aggressive, anxious, and isolated), some victimized children may find it difficult to form such friendships. However, most victimized children indeed have at least one reciprocated friendship, although the quality of this friendship may be compromised (Hodges, Boivin, Vitaro, & Bukowski, 1999). Physically victimized children have reported to have friendships that are less close, less secure, and more conflictual (Bagwell & Schmidt, 2011b). These victimized children may be unable to avoid conflicts as they tend to endorse aggressive strategies, rather than prosocial ones, when dealing with peer-related problems (Kochenderfer-Ladd, 2004). Some victimized children may display seemingly negative attributes (aloofness, inactiveness, and lack of social competence; Boivin, Petitclerc, Feng, & Barker, 2010), which prevent them from expanding their social circles.

Grotpeter and Crick (1996) showed that friendships of relationally aggressive children are characterized by higher levels of conflict and exclusivity. Crick and Nelson (2002) also demonstrated that some children experienced victimization by their friends and displayed mental health problems, suggesting that friend relational aggression/victimization may be detrimental to social-psychological adjustment problems. Similarly, Bagwell and Schmidt (2011b) indicated that relationally victimized children have more conflictual friendships and seek overly close friendships. These findings suggest that children who experience relational victimization, similar to physical victimization, tend to have difficult friendships.

Parker and Asher (1993) demonstrated that children can learn positive and negative behaviors in their friendships and the development of such behaviors varies depending on what kinds of friendships they have. In general, children who form more friendships tend to have higher social competence and display more supportive behaviors (Bagwell & Schmidt, 2011a). In line with this view, having fewer friendships has been shown to be associated with lower levels of prosocial behavior (Wentzel, Barry, & Caldwell, 2004), underachievement (Erath, Flanagan, & Bierman, 2008; Wentzel et al., 2004), and higher levels of internalizing and externalizing problems (Hartup & Stevens, 1997). However, the quality of friendships matters in these associations (Parker & Asher, 1993). Children who form positive friendships characterized by closeness, intimacy, and companionship may develop empathy, social skills, and emotional closeness by interacting with their peers who are prosocial (Hartup & Stevens, 1997). Children with negative friendships, which involve conflict and rivalry, may show anxiety and loneliness and learn problem behaviors from their friends when dealing with conflicts and then reinforce their behaviors by the repeated observations of the behavior (Hartup & Stevens, 1997; Parker & Asher, 1993). Indeed, positive friendships have been predictive of peer acceptance, peer support, and sociability (Berndt, 2002). In contrast, negative friendships have been linked to school maladjustment, including depression, physical aggression, and low achievement (Bagwell et al., 2005; Cillessen, Jiang, West, & Laszkowski, 2005; Ladd, Kochenderfer, & Coleman, 1996).
Positive friendships may provide a learning environment in which children can help each other to enhance their academic motivation and performance. These children may have friends who are academically strong and they may be willing to study together and encourage each other to excel. In a study using nationwide data of adolescents, Crosnoe, Cavanagh, and Elder (2003) found that youth with friends who like schools and do well in classes exhibited higher achievement than those with friends who are less interested in studying. In contrast, negative friendships may reduce the opportunity for children to study and instead increase the chance that they spend more time on friendship problems. Children who keep having conflicts with their friends may be concerned about school and less focused on academic activities even if they want to. In summary, relational and physical victimization may be linked to fewer friendships, less positive friendship qualities, and more negative friendship qualities within those friendships, which in turn may predict higher levels of internalizing and externalizing adjustment problems and poor academic achievement.

Relational and physical victimization in the cultural context

Cultural beliefs and values may influence socio-emotional development through socialization and interactions with peers (Chen, French, & Schneider, 2006). What is normative in a specific culture may in part regulate the way in which children socialize with peers, and this pattern may guide acceptance and rejection by peers and its impact on psychosocial adjustment (Chen, 2012). Children who learn normative beliefs and behaviors of peer groups become cognitively and behaviorally similar to other peers via observational learning (Chen, 2012). These children may avoid violating the “rules” and seek sanction and acceptance by peers. In the Chinese culture, which is thought to be more interdependent than independent (Kitayama & Tompson, 2010), children are inclined to seek group harmony and strictly follow implicit rules, thereby exhibiting a high level of sensitivity to negative evaluations of peers (Chen, 2012). In such a culture, relationally victimized children may experience high levels of interpersonal stress, presumably because they may feel humiliated and shamed by the risk of being appraised harshly by peers (Chen, 2012).

The culture that places emphasis on relationships may be the environment for reinforcing the effect of friendships. Children with positive friendships that are close, intimate, and supportive may have enhanced self-esteem, self-confidence, and self-worth as they feel validated within their friendships (Hartup & Stevens, 1997). These children may also obtain instrumental and emotional support from friends and protect themselves from being a victim of peer aggression and from developing adjustment problems further (Bagwell & Schmidt, 2011a). In contrast, children with negative friendships characterized by high levels of exclusivity and conflict may limit their interactions with peers, which may in turn contribute to social and school adjustment problems (Parker & Asher, 1993). These relational processes may be developmentally salient, particularly for Taiwanese children, who are inclined to endorse interdependence of relationships and group harmony. In other words, relative to children who are physically victimized by peers, children who are relationally victimized by peers may be more vulnerable to mental health problems and the positive or negative effect of friendships may be more
pronounced for these children. Taken together, peer victimization, particularly relational victimization, may be predictive of greater levels of social and school adjustment problems via the number of friendships and friendship quality in Taiwan.

The present study

The present study examined the differential pathways from relational and physical victimization to social and school adjustment problems through friendships. It was theorized that peer victimization, particularly relational victimization, would be predictive of these adjustment problems. It was also hypothesized that the association between relational victimization and adjustment problems would be indirectly influenced by the number of friendships and quality of friendships with best friend. Specifically, relational victimization would be associated with fewer friendships, more negative friendship quality, and less positive friendship quality, which in turn would lead to more severe adjustment problems and poorer academic success. Gender was treated as an exploratory factor due to the mixed findings regarding gender differences in peer victimization.

Method

Participants

The original sample consisted of 739 fourth (n = 239) and fifth (n = 500) graders (52.23% boys; age = 10.06 ± 0.59 years; age range = 8.83–11.42 years) participating in a longitudinal study of peer relationships and adjustment in Taiwan. Participants were recruited from four public elementary schools in Taipei area. In the fall semester, we sent letters to the principals of the elementary schools in Taipei City and Taipei County to explain the purpose and procedure of this study. Of those schools that agreed to participate, two schools from Taipei City and another two from Taipei County were randomly selected to be included in this study. The procedure and method of this study were approved by the Institute Review Board at the authors’ university. Of those who were contacted for this study, 88.61% agreed to participate, resulting in a sample of 739 students. Written informed consent and assent were obtained from the parents and the participants, respectively, after they were informed of the purpose and procedure of the study, the lack of an obligation to participate, and a reassurance of confidentiality.

Assessments occurred at two time points (i.e., fall and spring semesters) during one academic year. Students who participated at both time points (n = 471) were included in the analyses and were the final sample of the study (53.30% boys; age = 9.95 ± 0.59 years; age range = 8.83–11.42 years). This sample was compared to those who dropped out of the study (n = 268) on demographics and study variables at Time 1. The high attrition rate is largely due to the fact that one of the schools discontinued participating in the study. The comparison indicated that the participants included in this study did not differ from those who dropped out in terms of gender, household income, parental education, and most of the study variables at Time 1 ($\chi^2 = 0–10.53, df = 1–5, ps > .06; t = 0.22–1.89, df = 462–629, ps > .06$). However, children who remained in the study
were younger \((M = 9.95 \text{ years})\) than those who dropped out \((M = 10.25 \text{ years})\), \(t(674) = 6.60, p < .001\). We also compared between those included in the final sample and those who dropped out due to “typical attrition” (i.e., not from the one school that dropped out; \(n = 155\)) on demographics and key variables (i.e., friendship qualities, peer victimization, and number of friendships). Results indicated that the two groups did not differ in key study variables \((t = 0.26–1.68, df = 388–532, ps > .09)\) or gender \((\chi^2 = 0.41, df = 1, p = .58)\). They only differed in some demographics, that is, age, maternal and parental education, and household income \((t = 4.22, df = 573, p < .001; \chi^2 = 10.33–15.78, df = 4–5, ps < .05)\). Children who remained in the study were younger and had parents who were more highly educated and had higher incomes.

The socioeconomic status of the sample ranged from lower class to upper class based on parents’ education level and the household income. The distributions of paternal and maternal education levels were 45.6\% and 43.5\% for college and above, 36.8\% and 41.4\% for senior high school and vocational, and 17.6\% and 15.1\% for junior high and below, respectively. Annual household income ranged from less than US$10,258 to over US$41,032, with the average income at the level of US$20,516 to US$30,774. Overall, the current sample consisted of students from diverse socioeconomic backgrounds and was slightly different from the overall population in Taiwan; however, it was viewed as a representative sample of northern Taiwan.

**Measures**

**Peer victimization.** A 6-item peer nomination instrument was administered to assess children’s physical and relational victimization (Crick & Bigbee, 1998). During the classroom administration of the peer nomination instrument, participants were provided with a class roster and asked to nominate up to five classmates who best fit the behavioral descriptions provided for each item on the measure. We allowed up to five children to be nominated because we thought that children in Taiwan may have a larger social circle due to their collectivistic nature than those in the Western culture. Items for relational victimization (3 items) asked children to nominate those who “get ignored by other children,” “get left out of the group,” or “are the target of rumors or gossip.” Items for physical victimization (3 items) asked children to nominate those who “get hit or kicked by peers,” “get beat up,” or “get pushed or shoved.” The number of nominations children received from classmates for each of the items on these subscales was standardized within classrooms. The standardized scores for the items on the subscales were then summed to yield total scores for physical and relational victimization. For the current sample, Cronbach’s \(zs\) were .85 for relational victimization and .92 for physical victimization.

**Friendship qualities.** The Friendship Quality Scale (FQS; Bukowski, Hoza, & Boivin, 1994) and the Friendship Quality Measure (FQM; Grotpeter & Crick, 1996) were used to assess positive and negative qualities of children’s friendships. Students were asked to choose one of their best friendships and rate how true it was for each item of positive and negative friendships. The quality of friendships was not directly related to the assessment of reciprocated friendships. The subscales of Companionship (3 items), Help (5 items), Closeness (7 items), and Conflict (5 items) from the FQS were used along with the
subscales of Intimacy (3 items) and Exclusivity (5 items) from the FQM. The Companionship subscale focused on the amount of voluntary time children and their friends spend together (Bukowski et al., 1994). One sample item for this subscale was “My friend and I spend all our free time together.” The Help subscale consisted of two key subcomponents of the friendship—aid and protection from victimization (Bukowski et al., 1994). One sample item for this subscale was “My friend helps me when I am having trouble with something.” The Closeness subscale was an indicator of children’s sense of affection or “specialness” and the strength of the attachment or bond to the friends (Bukowski et al., 1994). One sample item was “I think about my friend when my friend is not around.” The Conflict subscale assessed the extent of fights, arguments, and disagreements in the friendship (Bukowski et al., 1994). One sample item for this subscale was “My friend and I can argue a lot.” The Intimacy subscale reflected the degree to which children shared their problems, secrets, and personal issues with their friends (Grotpeter & Crick, 1996). One sample item was “I can tell my friends my secrets.” The Exclusivity subscale reflected how much children wanted to play alone with their friend (Grotpeter & Crick, 1996). One sample item was “I feel sad and upset when my friend wants to be a good friend with others.” Children were asked to rate on a 5-point scale from 1 (never true) to 5 (almost always true). The mean score of the items on each subscale was used in the data analysis. In the present sample, Cronbach’s $\alpha$s were .74 for Companionship, .82 for Help, .86 for Closeness, .75 for Conflict, .79 for Intimacy, and .87 for Exclusivity.

**Number of reciprocated friendships.** Peer nomination was used to identify mutual friendships (Grotpeter & Crick, 1996). Participants were asked to nominate up to five best friends from their classroom rosters. Children who did not consent to the study were crossed out from the roster, and participants were told not to nominate those children and themselves. The class size ranged from 26 to 34 students. The participation rate for peer nomination ranged from 40.63% to 100%; only one classroom had a rate of 40.6%, and the rest was over 88%. Reciprocated friendships were identified as pairs of children who chose each other as a best friend.

**Internalizing problems.** Parents of the participants completed the subscales of anxious/depressed symptoms (14 items), somatic complaints (9 items), and withdrawal (9 items) of the Child Behavior Checklist (CBCL; Achenbach, 1991) to assess children’s degree of internalizing symptoms. Parents were asked to rate how true each item was of the child on a 3-point scale from 0 (not true) to 2 (very true or often true). Sample items for each of the three subscales included “Unhappy, sad or depressed,” “Physical problems, such as aches or pains, without known medical cause,” and “Would rather be alone than with others” for anxious/depressed symptoms, somatic complaints, and withdrawal, respectively. Mean scores of the items on these subscales were used in the data analysis. Cronbach’s $\alpha$s were .84 for anxious/depressed symptoms, .80 for somatic complaints, and .75 for withdrawal in the current sample.

**Externalizing problems.** Parents also completed the subscales of aggression (20 items) and delinquency (13 items) from the CBCL (Achenbach, 1991) to assess children’s
externalizing behavior problems. Items were also rated on a 3-point scale from 0 (not true) to 2 (very true or often true). Sample items for the aggression subscale was “Cruelty, bullying, or meanness to others” and for the delinquency subscale, “Steals outside the home.” Mean scores of the items on the subscales were used in the data analysis. For the current sample, Cronbach’s zs were .88 for aggressive behavior and .72 for delinquency. The Chinese version of the parent report of the CBCL has been demonstrated to be a reliable and valid instrument and has been widely used to measure children’s behavioral syndromes in Taiwanese child populations (Yang, Chen, & Soong, 2001).

Academic performance. Teachers reported on the participants’ academic performance in terms of their ranking relative to other students in the class. The participant was rated on a 5-point scale, from 1 (top 25%) to 5 (bottom 25%). A reverse-coded score was used in the analysis. Because there is no single numerical grading system that is consistent across Taiwanese elementary schools (teachers use different instruments to assess children’s academic performance across schools), academic performance was assessed via teacher reports on the ranking of students’ academic performance (instead of grades).

Procedure
Data of the present study were collected at two time points, 6 months apart (i.e., the fall and spring semesters), during one academic year. Data were from four sources: parent reports, children’s self-reports, peer nomination, and teacher reports. At Time 1, peers reported on the participating children’s relational victimization, physical victimization, and friendships; children completed a questionnaire about their friendship qualities within best friendships (i.e., companionship, help, closeness, intimacy, exclusivity, and conflict). At Time 2, parents reported on their child’s internalizing (i.e., anxious/depressed symptoms, somatic complaints, and withdrawal) and externalizing problems (i.e., delinquency and aggressive behavior); teachers reported on the participants’ academic performance.

Parents and teachers completed their versions of the questionnaire at homes and at schools, respectively. Peer nomination and children’s self-reports were administered in group sessions in the classrooms. Children were compensated for their time and participation with a stationary set of a pencil and an eraser (worth about US$1). Teachers were given a small gift, a 2G flash drive (worth about US$15), for completing questionnaires for each participating student in their classrooms. Parents were not provided with any incentives or compensation for their participation.

Statistical analyses
Structural Equation Modeling (SEM) analyses were conducted using Mplus (version 6) to examine the independent prediction of relational and physical victimization on the intervening variables (i.e., Time 1 positive and negative friendship qualities and the number of friendships) and outcome variables (i.e., Time 2 internalizing problems, externalizing problems, and academic performance). Maximum likelihood estimation was used in model testing and handling of missing data. One of the primary advantages
of SEM, a latent variable technique, is that constructs represented using SEM analysis could be free from measurement errors, thereby reducing the possibility of under-estimation of the effect sizes due to unreliability of the measures (Card & Little, 2007). Thus, multiple measures can be combined to create latent constructs to minimize the biases associated with one single source or scale.

In the present study, latent constructs for relational and physical victimization were created using items (“get ignored,” “get left out,” and “target of rumors or gossip” for relational victimization; “get hit or kicked,” “get beat up,” and “get pushed or shoved” for physical victimization) that were supposed to tap on these constructs. Error variances of items “get hit or kicked” and “get pushed or shoved” were allowed to correlate with each other based on modification indices. A latent construct for positive friendship quality was created by combining the subscales of companionship, closeness, intimacy, and help (error variances of closeness and intimacy were allowed to correlate) while a latent construct for negative friendship quality was created using the subscales of conflict and exclusivity. A latent construct for internalizing problems was created using the subscales of anxious/depressed symptoms, somatic complaints, and withdrawal, and a latent construct for externalizing problems was created using the subscales of aggressive behavior and delinquency. Subscales (not each item) were used to specify latent constructs to make the model more parsimonious.

We first tested this measurement model; all the latent constructs were allowed to correlate with each other. We then tested a hypothesized model in which the three main outcomes (i.e., internalizing and externalizing problems, and academic performance) were included. In this hypothesized model, we tested the paths from relational victimization to each of the three mediators (i.e., positive friendship quality, negative friendship quality, and the number of friendships) and then the paths from each of these three mediators to outcome variables (e.g., internalizing and externalizing problems, and academic performance). Similarly, we tested the paths from physical victimization to each of the three mediators and then the paths from each of these three mediators to outcome variables. Also, included in the models were the direct paths from relational and physical victimization to outcome variables. In addition, relational and physical victimization were allowed to correlate with each other in the model, so were the three outcomes.

Model fit was assessed with multiple criteria: \(\chi^2\), comparative fit index (CFI), the Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). In general, nonsignificant \(\chi^2\), CFI and/or TLI greater than .95, RMSEA less than .05, and SRMR less than .08 suggest a good model fit with the observed data (Hu & Bentler, 1999; McDonald & Ho, 2002). Because the \(\chi^2\) statistic is considerably affected by sample size, it was not used as the primary indicator of the model fit (Hu & Bentler, 1999).

Results

Preliminary analyses

Means, standard deviations, and bivariate correlations of the observed variables are presented in Table 1. Results showed some evidence that relational victimization was
positively correlated with adjustment problems, including internalizing and externalizing problems, and poor academic performance, whereas physical victimization was positively correlated with externalizing problems and poor academic performance. Moreover, relational victimization, in general, was related to less positive friendship quality, more negative friendship quality, and fewer friends while physical victimization was related to more conflicts and less intimacy within best friendships. In addition, positive friendship quality was related to less withdrawal and better academic performance; negative friendship quality (especially conflict) was related to more internalizing and externalizing problems and poor academic performance. The number of friendships was not significantly related to internalizing problems, externalizing problems, or academic performance.

Measurement model

The measurement model with latent constructs for relational victimization, physical victimization, positive friendship qualities, negative friendship qualities, and internalizing and externalizing problems demonstrated an excellent model fit, $\chi^2 = 193.52$, $df = 102$, $p < .001$, CFI = .98, TLI = .97, RMSEA = .05 (.04, .06), and SRMR = .05. All the observed variables/items loaded significantly onto their respective factors (all $ps < .01$).

Model of peer victimization predicting adjustment outcomes

We then tested our hypothesized full model. Results showed an excellent fit. Figure 1 shows the standardized path coefficients for significant paths in the model predicting all three outcomes from peer victimization and the mediation effects through friendship qualities. Below, we organized the results by adjustment outcomes.

Internalizing problems. As shown in Figure 1, there were distinct paths linking different types of peer victimization (i.e., relational versus physical victimization) to internalizing problems. Specifically, relational victimization was negatively related to positive friendship qualities (i.e., companionship, help, closeness, intimacy) and the number of friendships was positively related to negative friendship qualities (i.e., exclusivity and conflict). Negative friendship qualities, in turn, predicted more internalizing problems 6 months later. There were marginally significant associations between positive friendship qualities and internalizing problems and between relational victimization and internalizing problems. Overall, these findings suggested that relational victimization was indirectly associated with internalizing problems through negative friendship qualities (and potentially positive friendship qualities) and possibly directly associated with internalizing problems. Physical victimization, on the other hand, was negatively related to internalizing problems.

Externalizing problems. Similar to the results above, relational victimization was positively related to negative friendship qualities which, in turn, predicted more externalizing problems 6 months later. There was also a direct link between relational
Table 1. Correlations among observed variables in the theoretical model.

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Note: Variables 1–13 were from Time 1, variables 14–19 were from Time 2. RV = relational victimization; PV = physical victimization; Comp = companionship; Close = closeness; Intim = intimacy; Exclu = exclusivity; Cnfl = conflict; Frnd = number of friendships; Delin = delinquency; Agg = aggressive behavior; Anx = anxious/depressed symptoms; Som = somatic complaints; Wdrw = social withdrawal; Acad = academic performance; RV1 = “get ignored by other children”; RV2 = “get left out of the group”; RV3 = “are the target of rumors or gossip”; PV1 = “get hit or kicked by peers”; PV2 = “get beat up”; PV3 = “get pushed or shoved.”

*p < .05; **p < .01; ***p < .001.
Figure 1. Theoretical model (with standardized estimates) predicting internalizing problems, externalizing problems, and academic performance. Significant paths are shown in bold lines; marginally significant paths are shown in dashed lines; nonsignificant lines are not shown. \( \chi^2 = 243.63, df = 127, p < .001, \text{CFI} = .97, \text{TLI} = .96, \text{RMSEA} = .05 (.04, .05), \) and \( \text{SRMR} = .05. \text{CFI} = \text{comparative fit index}; \text{TLI} = \text{Tucker–Lewis index}; \text{RMSEA} = \text{root mean square error of approximation}; \text{SRMR} = \text{standardized root mean square residual}. \quad \dagger p < .10; \quad \ast p < .05; \quad \ast\ast p < .01; \quad \ast\ast\ast p < .001. \)
victimization and externalizing problems. These findings suggested that relational victimization was directly and indirectly, through negative friendship qualities, associated with externalizing problems. Physical victimization, on the other hand, was not related to externalizing problems.

**Academic performance.** Relational victimization was related to poor positive friendship qualities which, in turn, were related to poor academic performance 6 months later. In addition, relational victimization predicted poor academic performance 6 months later. Overall, findings suggested that relational victimization was directly and indirectly, through poor positive friendship qualities, associated with lower academic performance. Physical victimization was not related to academic performance.

**Exploratory analyses of gender differences**

We conducted additional analyses to explore the moderation of gender on the measurement model (i.e., measurement invariance across gender) and the structural paths in the full hypothesized model using multigroup analysis in Mplus with gender as the grouping variable. Differences in model fit were evaluated using ΔCFI, given that Δχ² was affected by sample size (although Δχ² is also reported). ΔCFI ≤ .01 suggests that invariance is likely (Cheung & Rensvold, 2002). For measurement invariance across gender, an unconstrained model in which all the factor loadings, correlations among latent constructs, and correlations among error variances (described under Statistical Analyses section) that were set to be freely estimated were first tested and then compared to a constrained model where all the estimates were set to be equal between boys and girls. Results indicated that the constrained models were not significantly different from the unconstrained models, ΔCFI = .005 and Δχ² (17) = 33.30, p = .01, suggesting measurement invariance across gender.

For gender moderation on the structural paths, an unconstrained model in which the structural paths were set to be freely estimated (the rest of the model were constrained to be equal between boys and girls) was first tested and then compared to a constrained model in which all the paths were set to be equal between gender. Results indicated that the constrained models were not significantly different from the unconstrained models, ΔCFI = .002 and Δχ² (21) = 27.05, p = .169, suggesting that the structural paths did not vary with gender.

**Discussion**

The present study examined the differential associations between forms of peer victimization and social and school adjustment as well as the role of friendships with a Taiwanese sample. This study demonstrated, as hypothesized, that the association between relational victimization (not physical victimization) and internalizing and externalizing adjustment problems was mediated by negative friendship qualities. Specifically, higher levels of relational victimization were linked with more negative friendships indexed by conflict and exclusivity, which led to greater levels of internalizing and externalizing adjustment problems. This finding is in line with Kawabata et al.’s study (2010) which showed that
relational aggression (not physical aggression) was uniquely associated with internalizing and externalizing problems and relational victimization among Japanese children. The same study also found that the link between relational aggression and relational victimization was moderated by friendships characterized by high levels of conflicts. That is, relational aggression predicted greater levels of relational victimization for children who formed conflictual friendships. Similar to the present study, there were no findings for physical aggression/victimization and friendship qualities (Kawabata et al., 2010).

In general, some relationally victimized children may tend to form friendships that are more conflictual, more enmeshed, and overly dependent (Grotpe & Crick, 1996) presumably due to high levels of stress, feelings of anxiety, and uncertainty about the self and peers (Crick & Bigbee, 1998). Relationally victimized children may be more likely to view themselves negatively, perceive peer relationships unsafely, and exhibit low self-esteem and poor self-concept (Troop-Gordon & Ladd, 2005). They may fail to inhibit anger impulse and behavioral control and at the same time, amplify emotion dysregulation and behavior problems (Rudolph, Troop-Gordon, & Flynn, 2009). These undesirable characteristics may prevent children from forming healthy friendships. In turn, lack of high-quality friendships and the presence of enmeshed and conflictual friendships may invite social-psychological adjustment problems, including depression/anxiety, social withdrawal, and aggression.

These developmental maladjustment processes may be salient particularly for children in Asian cultures. Children in a more relationally oriented culture (e.g., Taiwan, Japan) may be more cognitively and emotionally vulnerable to mental health problems when they experience relationally oriented peer problems. This view is supported by a study of Kawabata, Crick, and Hamaguchi (2013) showing that relational victimization was associated with relational hostile attribution biases and depressive symptoms only for Japanese children (not American children in this study). This finding indicates that children in Japan may be more susceptible to peer provocations in a relational context and feel more negatively when they are relationally victimized. Although a lot more efforts to examine cross-cultural differences in the consequences of relational victimization versus physical victimization are needed, the present study hinted on the possibility that peer victimization, particularly relational victimization and negative friendships, are risk factors for mental health problems in a collectivistic culture, such as in Taiwan.

The link between relational victimization and academic achievement was indirectly influenced by positive friendships. In other words, relationally victimized children were less likely to form friendships that typically provide a warm and supportive learning environment, which may contribute to lower academic achievement. This finding is in line with the view that positive, high-quality friendships generally include emotional and instrumental support and serve as a preventive factor for social and school adjustment (Hartup & Stevens, 1997). These friendships may also help children to learn academic subjects, to boost their morale or motivation for learning, and to be comfortable about asking assistance for academic issues (Wentzel et al., 2004). Friendships are a socializing context for developing effective coping strategies for victimization, protecting children from being victimized by peers further, and giving abundant opportunities for classroom participation. Hence, positive, high-quality friendships may be a resilient process for relationally victimized children.
Several unexpected findings need more clarification. One is that the number of friendships did not mediate the link between forms of peer victimization and adjustment problems. This suggests that friendship quality or what is occurring within friendships may be a more important factor than an actual number of friendships for social adjustment. Having one friendship that is abusive, conflictual, and exclusive may have more negative consequences than a mere lack of friendship. Having multiple low-quality friendships may make children more depressed, anxious, and frustrated perhaps due to low satisfaction of the friendships, as compared to having one high-quality friendship. Alternatively, having one high-quality friendship may help children to be less vulnerable to victimization than having multiple friendships that are superficial and helpless. Taken together, the quality of friendships, relative to its quantity, may matter more for children who are relationally victimized by their peers.

Nevertheless, relational victimization was uniquely associated with fewer numbers of friendships above and beyond physical victimization. Relationally victimized (not physically victimized) children may find it difficult to form friendships conceivably due to lack of social competence that is needed to establish close ties with their peers. These children tend to display specific behavioral patterns, such as anxious-depressive attitudes, avoidance, and withdrawal (Crick & Bigbee, 1998). The presence of these dispositions may signal unwillingness to interact with peers or even refusal to make friends.

Another unexpected finding is that physical victimization, after accounting for relational victimization, was not linked to externalizing problems even indirectly through the number and quality of friendships. This is somewhat surprising given a substantial body of literatures that have demonstrated that physical victimization was predictive of increases in physical aggression and other social-psychological adjustment problems (e.g., Hodges & Perry, 1999; Sullivan et al., 2006). One possibility for this incongruity may stem from cross-cultural differences in the effect of physical victimization on externalizing problems. Given that group harmony is highly valued in Taiwan, problem behaviors such as physical aggression that is against such a cultural value may be intervened by authority figures immediately. In contrast, relational aggression that is covert in nature may not be easily observed by adults. Consequently, relational aggression/victimization may continue longer within the peer group and become more severe over time. This process may reduce the risk of developing adjustment problems for physically victimized children, at least in Taiwan.

Similarly, physical victimization was not uniquely associated with academic achievement after the contribution of relational victimization was controlled for. In fact, there was a small negative correlation between physical victimization and achievement, suggesting that physical victimization is a potential risk factor for children’s underachievement. It is possible that if children are hit or threatened to be beaten up by peers, they may heighten their stress and anxiety and find it very difficult to focus on schoolwork. However, the influence of physical victimization may be somehow overshadowed by relational victimization, which covaries with physical victimization and more strongly predicts achievement and other mental health problems, such as internalizing problems.

One limitation is the issue of the sample representativeness and the generalizability of the findings. Because the current sample consisted of fourth and fifth graders from urban, middle-class families in Taiwan, the findings may not be applicable to children in other
developmental stages, socioeconomic statuses, and nations. Information regarding larger social contexts, such as school districts, neighborhoods, and media, was not gathered, which may further confound the effect of peer victimization on social and school adjustment problems. For example, school-level aggression and victimization and neighborhood crime rates may exacerbate the association between forms of victimization and social-psychological adjustment problems. The present study is correlational in nature and thus precludes conclusions about the causal effects of forms of peer victimization. Bidirectional associations are possible in that relational victimization may invite more abusive and exclusive friendships, which may be the negative socializing context for facilitating the use of relational aggression. The use of relational aggression, in turn, may lead to negative friendships and then place the child at further risk for peer victimization. A future longitudinal study should explore a transactional model linking peer victimization, friendships, and adjustment.

A future study with a person-centered approach (instead of a variable-centered approach) helps us to clarify individual differences in having both positive and negative qualities of friendships. For example, children who spend a lot of time with their friends may build closeness and intimacy and experience conflicts and fights concurrently. In addition, the conceptual overlap between relational victimization and exclusivity may be fully considered in future research. Once again, a person-centered approach will elucidate a subgroup of children who are relationally victimized by peers and have friendships characterized by high levels of closeness, conflict, and exclusivity. Finally, developmental processes involving forms of peer victimization, friendship reciprocity and quality, and adjustment in different cultures remain unexamined. A future cross-cultural study that addresses this issue is sorely needed.

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References


