


## Regular Article

# Longitudinal relations among family dysfunction, depressive symptoms, and cyberbullying involvement in Chinese early adolescents: Disentangling between- and within-person associations

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### Abstract

Family dysfunction plays an important role in cyberbullying and cybervictimization. However, little research has investigated the longitudinal relations and the mediating mechanisms between them during adolescence. This study examined the longitudinal relations between family dysfunction and cyberbullying and cybervictimization, along with whether depressive symptoms function as mediators between them at the within-person level. A total of 3,743 Chinese adolescents (46.2% females;  $M_{\text{age}} = 9.92$  years;  $SD = 0.51$ ) participated a five-wave longitudinal study with a 6-month time interval. The results of random intercept cross-lagged panel model found that: (1) family dysfunction directly predicted depressive symptoms and vice versa at the within-person level; (2) depressive symptoms directly predicted cyberbullying and cybervictimization at the within-person level, but not vice versa; (3) family dysfunction indirectly predicted cyberbullying and cybervictimization via depressive symptoms at the within-person level; (4) at the between-person level, there were significant associations among family dysfunction, depressive symptoms, cyberbullying and cybervictimization. The results are discussed on the basis of the mechanisms that lead to cyberbullying and cybervictimization.

**Keywords:** cyberbullying; cybervictimization; depressive symptoms; family dysfunction

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### Introduction

As digital information and communication technologies continue to develop rapidly, cyberbullying and cybervictimization are increasing and have become a significant social concern for children and adolescents worldwide (e.g., Kowalski et al., 2014). Cyberbullying is defined as “any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others” (Tokunaga, 2010, p. 278). Cybervictimization refers to the victims’ experience of being bullied via electronic or digital media (Tokunaga, 2010). A recent United Nations Children’s Fund (UNICEF) report on cyberbullying gathered information from 30 countries and found that 33% of youths reported experiences of cyberbullying or cybervictimization (UNICEF, 2019). Early adolescence (about 10–13 years old) is a critical period for the development of cyberbullying involvement, research has found that the prevalence of cyberbullying and cybervictimization tends to peaks during early adolescence (e.g., Kowalski et al., 2019). Moreover, cyberbullying and cybervictimization have been shown to significantly predict a variety of negative outcomes, including anxiety and depressive symptoms,

suicidal ideation, and substance abuse (e.g., Kowalski et al., 2014; Kwan et al., 2020). Given these serious consequences, understanding the etiology of cyberbullying and cybervictimization by identifying its important predictors is vital to develop prevention and intervention strategies for reducing cyberbullying involvement.

The social–ecological framework of cyberbullying involvement highlighted family context as an important microsystem for understanding the development of cyberbullying and cybervictimization among adolescents (Baldry et al., 2015; Cross et al., 2015). At the onset of puberty, early adolescents begin to strive for autonomy and resist parental authority, and parents may adopt more controlling parenting during this stage, thus youths may experience more conflict with parents and then lead to a temporary increased family dysfunction (De Goede et al., 2009). The literature has well-documented that family dysfunction is a significant risk factor for the development of youths’ cyberbullying and cybervictimization (for reviews, see López-Castro & Priegue, 2019; Nocentini et al., 2019). Even though these processes take place at the within-person level, empirical support for this association between family dysfunction and cyberbullying or cybervictimization is largely based on cross-sectional design or longitudinal studies along with between-person analyses such as regression analyses at the group level (see López-Castro & Priegue, 2019, for a review), and it remains unclear how family dysfunction interacts with cyberbullying and cybervictimization at the within-person level. In addition, numerous empirical studies have found significant

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associations between depressive symptoms and family dysfunction (e.g., Humphreys *et al.*, 2020, for a meta-analysis) or cyberbullying involvement (e.g., Chen *et al.*, 2017, for a meta-analysis). Research has also suggested that psychosocial adjustment, such as depressive symptoms may explain the relation between family dysfunction and cyberbullying involvement (e.g., Romero-Abrio *et al.*, 2019). Nevertheless, knowledge is lacking about whether and how youths' depressive symptoms operate in longitudinal relations between family dysfunction and cyberbullying and cybervictimization at the within-person level. Therefore, this study used random-intercept cross-lagged panel modeling (RI-CLPM) (Hamaker *et al.*, 2015) to explore the longitudinal relations between family dysfunction and cyberbullying and cybervictimization in Chinese adolescents, and also to examine the mediating function of the depressive symptoms that underlie the links between such factors.

### *Family dysfunction in relation to cyberbullying and cybervictimization*

Family dysfunction refers to a state of negative family dynamics and poor family cohesion, and it can strongly influence children's problematic behaviors (e.g., delinquency behaviors, addictive behaviors) and internalizing symptoms (e.g., depressive and anxiety symptoms) (e.g., Kapetanovic *et al.*, 2019; Liu *et al.*, 2020; Wang *et al.*, 2020). In contrast, a positive family environment promotes healthy physical, psychological, and social development in children (Buehler, 2020, for a review; Nie *et al.*, 2020).

The spillover theory (Parke & Ladd, 2016) posits that individuals live in complex social systems, and it further proposes that stress from one system can spillover into and result in stress in another domain. Most previous research on spillover information has been conducted in the family context (e.g., marriage, parent-child relationships, sibling relationships) or has examined cross-domain spillover between the family system and the school system (e.g., peer relationships, teacher-student relationships) (e.g., Gong *et al.*, 2022; Kaufman *et al.*, 2020; Timmons & Margolin, 2015). However, the spillover from the family systems domain cannot be limited to that, and it may be spillover to all domain of interpersonal relationships, including those in the Internet (e.g., Kashian, 2021). On the one hand, skills or competencies learned by children in the family can be transferred and generalized to cyber communication. Adverse family environments and relationships may also enable children to fail to communicate amicably in the cyberspace, and thus cyberbullying or cybervictimization may occur. On the other hand, the opposite pathway may be feasible. Events that children encounter in cyber communication sometimes spillover into family life and trigger certain reactions from family members. In the long run, there may be mutual spillover effects of conflict in the family and in the cyberspace.

Currently, numerous studies have thoroughly demonstrated that family variables play a crucial role in cyberbullying and cybervictimization (e.g., López-Castro & Priegue, 2019; Zych *et al.*, 2019). For instance, a systematic review of 34 published articles supports the notion that family communication and the quality of family relationships are stable predictors of cyberbullying and cybervictimization (López-Castro & Priegue, 2019). Conversely, youths who have experienced a relatively more positive family environment and parental interactions have been found to be less likely to display cyberbullying (OR = 1.55/1.87) and experience cybervictimization (OR = 1.55/1.39) (Zych *et al.*, 2019, for a meta-analysis). In addition, a cross-sectional study found that children who communicated poorly with their parents, did not

converse often with their parents, and had difficulties in discussing problems with their parents were prone to higher levels of cyberbullying and cybervictimization than their peers were (Buelga *et al.*, 2017). Another cross-sectional study uncovered a positive and significant relation between family dysfunction and adolescents' cybervictimization experiences, after controlling for other family and peer variables (Hong *et al.*, 2018). Hence, in this study we assumed that family dysfunction could be a major risk factor related to youths' cyberbullying and cybervictimization.

Moreover, an intrapersonal strain in cyberspace can also transfer to other domains, such as the family context (Kashian, 2021). Some studies have found that adolescents who were involved in cyberbullying as perpetrators or as victims had more problematic and less open communication with their parents (e.g., Ortega Barón *et al.*, 2019), and thus they may have experienced greater family dysfunction. However, the most relevant previous studies were cross-sectional in nature and could provide limited knowledge about bidirectional relations between family dysfunction and cyberbullying and cybervictimization, let alone at the within-person level. The current study thus extended beyond prior work to examine the bidirectional spillover effects between family dysfunction and cyberbullying involvement (i.e., cyberbullying and cybervictimization) using RI-CLPM. The RI-CLPM can disaggregate the between-person differences from the within-person effects (e.g., Mastrotheodoros *et al.*, 2020; Orth *et al.*, 2021), allowing for explicit modeling of the stable, trait like between-person differences for each construct. Partialling out the between-person variance allows the estimated lagged effects between constructs in RI-CLPM to refer exclusively to within-person fluctuations over time (Hamaker *et al.*, 2015).

### *Depressive symptoms as a mediator*

Spillover theory is further extended to suggest that negative emotions (e.g., depressive symptoms) triggered by a negative interpersonal event in one context can spillover to influence subsequent interactions in another context (Parke & Ladd, 2016). Several longitudinal studies have suggested that depressive symptoms are likely to drive relationship dynamics from one context to the other (e.g., Kaufman *et al.*, 2020; Zhou *et al.*, 2022). Thus, bidirectional influences between family and cyberspace systems may occur through indirect pathways driven by individual's depressive symptoms. Specifically, family dysfunction may signify more negative and conflicted relationships in family, which may lead adolescents to perceive less emotional closeness and support from family, thus further make youth vulnerable to depressive symptoms (e.g., Gardner *et al.*, 2019). In turn, youth with depressive symptoms are less likely to interact with others, more inclined to avoid real life and immerse themselves in the cyberspace, increasing the likelihood of cyberbullying and cybervictimization (e.g., Huang *et al.*, 2021). Inversely, adolescents who experienced more cyberbullying and cybervictimization may display increased depressive symptoms (e.g., Kowalski *et al.*, 2014), which may lead youths to act in ways that generate increased stress and conflict with parents or caregivers (e.g., Thornberry *et al.*, 2014), thus experiencing more family dysfunction.

Previous studies have found preliminary evidence indicating that a bidirectional influence between family dysfunction and cyberbullying or cybervictimization may occur through indirect pathways in which individuals' depressive symptoms. On the one hand, children and youths who experience family dysfunction have been found to be more likely to exhibit depressive symptoms

(e.g., Klasen et al., 2015). Meta-analyses of studies on children and adolescents have found that family dysfunction was associated with various psychosocial problems, including an increased risk of depressive symptoms (Gardner et al., 2019; Humphreys et al., 2020, for meta-analyses). On the other hand, children's mental health problems, such as depressive symptoms, further elicit youths' experiences of dysfunction in the family context. One meta-analysis found that children's internalizing problems (e.g., depressive symptoms) are significant risk factors for parental abuse and family neglect (Thornberry et al., 2014, for a meta-analysis). Some studies have also systematically examined the within-person bidirectional relations between family dysfunction or family-related variables and internalizing problems (e.g., depressive symptoms) after disaggregating between-person effects. For example, Kim et al. (2022) used the RI-CLPM to examine within-person interrelations between family functioning and internalizing problems in adolescents (from age 11–26 years) and found no significant cross-lagged relations between internalizing problems and family functioning at the within-person level. Another longitudinal study using RI-CLPM also found that family functioning was not significantly associated with internalizing problems on the within-family level among adolescents (Mastrotheodoros et al., 2020). In contrast, two longitudinal studies supported the within-person bidirectional relation between maladaptive family contexts (negative parenting and emotional maltreatment) and depressive symptoms in Chinese early adolescents (Li et al., 2021; Zhou et al., 2022).

Moreover, previous meta-analyses and longitudinal studies also found that depressive symptoms were a prominent predictive factor in cyberbullying and cybervictimization (e.g., Chen et al., 2017, for a meta-analysis; Chu et al., 2019; Huang et al., 2021). In contrast, depressive symptoms could also be the result of cyberbullying and cybervictimization (Kowalski et al., 2014, for a meta-analysis). Furthermore, the findings of several longitudinal studies using traditional cross-lagged panel model (CLPM) showed the reciprocal relations between cybervictimization and depressive symptoms (Gámez-Guadix et al., 2013; Gao et al., 2021; Rose & Tynes, 2015). A similar reciprocal relation between cyberbullying and depressive symptoms among youths were found by the longitudinal study of Yuan and Liu (2021). However, a two-wave longitudinal study among adolescents only found that cyberbullying (but not cybervictimization) at Time 1 was significantly related to depressive symptoms 6 months later, whereas depressive symptoms at Time 1 were not related to cyberbullying and cybervictimization at Time 2. Another longitudinal study using CLPM found that depressive symptoms predicted subsequent cyberbullying/cybervictimization, whereas cyberbullying/cybervictimization did not predict subsequent depressive symptoms in Chinese early adolescents (Zhang et al., 2020). Notable, these studies using CLPM did not distinguish between within- and between-person effects, thus limiting to explore the within-person relations between depressive symptoms and cyberbullying involvement.

Although the aforementioned studies initially supported the significant relations between depressive symptoms, family dysfunction and cyberbullying involvement, few studies have investigated the longitudinal relations and the mediating mechanisms among them. Such knowledge would enhance our comprehension of the complex processes underlying the association between family dysfunction and cyberbullying and cybervictimization and could benefit the development of effective interventions to foster the prevention and reduction of cyberbullying behaviors among adolescents.

## The present study

Because the extant literature lacks a complete understanding of the dynamic associations between family dysfunction and cyberbullying and cybervictimization over time, this current longitudinal study addressed several research gaps by exploring the dynamic associations among those variables in Chinese early adolescents. Moreover, although previous studies have demonstrated important correlations between depressive symptoms and family dysfunction and cyberbullying/cybervictimization, no study has systematically examined the roles of depressive symptoms in the longitudinal relations between family dysfunction and either cyberbullying or cybervictimization, leading this study to explore whether depressive symptoms function as mediators in those longitudinal relations.

## Method

### Participants

Eight public elementary schools in northwestern China participated in this study. A total of 3,743 youth (46.2% females;  $M_{\text{age}} = 9.92$  years;  $SD = 0.51$ ) joined this study at the baseline measurements. The participants were assessed five times – once every 6 months over a period of 2.5 years. Most of the participants came from middle-class families with parents who had completed at least a middle school education. In terms of family employment, 80.17% of the fathers and 67.56% of the mothers had held a stable job in the previous year. Of the total number of students who participated at Time 1 (T1), 4.38% at Time 2 (T2), 3.95% at Time 3 (T3), 5.32% at Time 4 (T4), and 6.60% at Time 5 (T5) were missing. Students who were absent on the day of the assessment or who had transferred to other schools accounted for the majority of that attrition. The MCAR test was conducted for all variables (Little & Rubin, 2002) and yielded a normed  $\chi^2/df$  of 1.08, indicating that the missing data pattern was not significantly different from a random pattern (Bollen, 2014). We used the FIML estimation strategy in our model analyses. The FIML can estimate parameters using all available information and can produce unbiased estimates for the non-normality of indicator variables, under the missing at random assumption (Little & Rubin, 2002).

### Procedures

This study was approved by the Human Research Ethics Committee of Northwest Normal University and also by the local education authorities and relevant school principals. Written consent was obtained from all parents and their children before the data collection. Two trained graduate assistants administered the study's questionnaire in a regular classroom setting and gave identical verbal and written instructions to all student participants. Participants were allowed sufficient time to complete the questionnaires. Parents completed their education level questionnaire by answering questions online. The information provided by all participants was kept strictly confidential. Participation was entirely voluntary, and all participants were free to quit the study at any time.

### Measures

#### Family dysfunction

We assessed family dysfunction by the General Function subscale (GF) of the Family Assessment Device (FAD) (Epstein et al., 1978). The GF consists of 12 items (e.g., "We avoid discussing our fears

and concerns”) and uses a four-point Likert scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Mean scores were calculated after reverse-coding six items (e.g., “We can express our feelings to each other”), so that a higher score indicated lower levels of family dysfunction. The GF has been used effectively in Chinese adolescents (e.g., Guo et al., 2018). The Cronbach’s coefficient  $\alpha$  for the GF ranged from 0.79 to 0.83 across T1 through T5 in this study.

#### Depressive symptoms

We assessed depressive symptoms with the Chinese version of the YSR form Child Behavior Checklist (Achenbach, 1991), which includes 16 items assessing depressive symptoms (e.g., “Unhappy, sad, or depressed”). It uses a three-point scale ranging from 0 (*not true*) to 2 (*very true or often true*). Mean scores were calculated, with a higher score reflecting a higher level of depressive symptoms. This scale has demonstrated good reliability and validity among Chinese adolescents (Su et al., 1999). The Cronbach’s coefficient  $\alpha$  for the YSR ranged from 0.88 to 0.92 across T1 through T5 in this study.

#### Cyberbullying and cybervictimization

We measured cyberbullying and cybervictimization with the second revision of the Revised Cyberbullying Inventory (RCBI-II) (Topcu & Erdur-Baker, 2018). The RCBI-II is divided into two subscales that are used to assess cyberbullying (eight items; e.g., “I send embarrassing and hurtful messages through the Internet”) and cybervictimization (eight items; e.g., “Someone sends embarrassing and hurtful messages to me through the Internet”). Participants responded on a four-point scale, ranging from 1 (*it hasn't happened in the past couple of months*) to 4 (*several times a week*). Mean scores of these two subscales were calculated separately, with higher scores reflecting higher levels of cyberbullying and cybervictimization. The RCBI-II has been shown to have good psychometric properties among Chinese adolescents (Zhao et al., 2022). Cronbach’s coefficient  $\alpha$  for the cyberbullying subscale ranged from 0.90 to 0.91 across T1 through T5, and the Cronbach’s coefficient  $\alpha$  for the cybervictimization subscale from 0.92 to 0.93 across T1 through T5 in this study.

#### Covariates

The study included several covariates that were student- and parent-reported demographic items, including gender (0 = male, 1 = female), age, and SES at T1. Parents reported their educational levels via an online questionnaire, using a scale from 0 (*never attended school*) to 8 (*doctoral degree*). The educational levels of the fathers and mothers were used to index their SES.

#### Data analyses

##### Preliminary analyses

To address any potential biases due to attrition in longitudinal analyses, FIML methods were used for the subsequent analysis. We calculated descriptive analyses and bivariate correlations for all of the study’s variables using the statistical software Mplus version 8.0.

##### Random Intercepts Cross-Lagged Panel Model

We employed the RI-CLPM by using the procedures suggested by Hamaker et al. (2015). First, each observed score was regressed on its own latent factor, with factor loadings constrained to 1. Then, the random intercepts of each construct were added by regressing

on the constructs at T1–T5, with factor loadings constrained to 1, and the remaining variation in the constructs represented the within-person processes. The variances of the observed scores were hence constrained to zero to capture all of the variation in the observed scores, as measured by the within-person and between-person factor structures. Also, the “MODEL = NOCOV” command was employed to set all default covariances to zero. As time-invariant covariates, the students’ gender, age, and SES were regressed on all study variables at T1 and the random intercepts of each variable.

For reasons of parsimony and because the study made no specific hypotheses regarding potential within-person process non-stationarity, autoregressive paths or/and cross-lagged paths were thus constrained to be equal over time in a stepwise manner and were compared with unconstrained baseline models (Orth et al., 2021). Four models were compared. First, an unconstrained model was tested in which all cross-lagged paths, autoregressive paths, and occasional covariance were freely estimated (Model 1). Second, a constrained model was tested using cross-wave equality constraints on autoregressive effects (Model 2). Third, a constrained model was tested using cross-wave equality constraints on cross-lagged effects (Model 3). Fourth, a constrained model was tested using cross-wave equality constraints on both autoregressive and cross-lagged effects (Model 4). This study used the MLR method to estimate the model.

Model fit was assessed by the chi-square statistic, the CFI, the TLI, the RMSEA, and the SRMR. CFI and TLI values greater than 0.90 and RMSEA and SRMR values less than 0.08 were regarded to be indicative of a good model fit (Kline, 2015). For model comparisons, because the sample size greatly affected  $\chi^2$ , no significant difference was deemed to exist if the fit indices of  $\Delta CFI < 0.01$ ,  $\Delta RMSEA < 0.015$ , and  $\Delta SRMR < 0.030$  (Chen, 2007). When the model fit was not significantly different, a more parsimonious model was retained. To test the significance of the indirect effects and generate percentile confidence intervals, percentile bootstrapping ( $n = 5,000$  samples) was used. We concluded that the indirect effect was statistically significant when the 95% confidence interval for the estimate of the indirect effect excluded zero.

#### Results

##### Preliminary analyses

The means, standard deviations, and bivariate correlations of the study variables at T1–T5 are reported in Table S1 of the online supplemental materials.

##### Random Intercept Cross-Lagged Panel Models

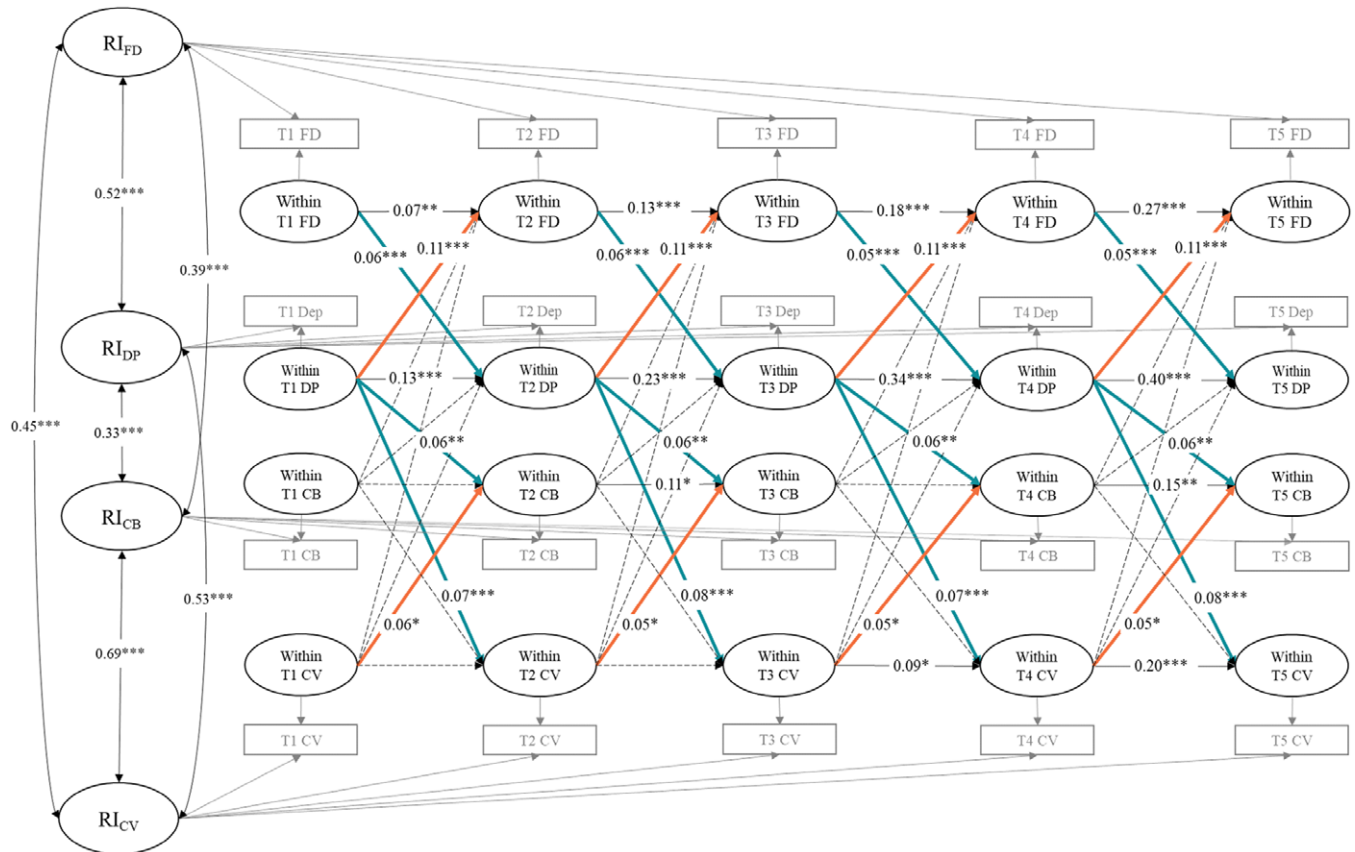
The results of the RI-CLPM model comparisons are presented in Table 1. Setting the autoregressive paths (i.e., Model 2) or both the autoregressive and cross-lagged paths (i.e., Model 4) to be equal over time did significantly decrease the fit of the unconstrained model (i.e., Model 1). Only setting the cross-lagged paths (i.e., Model 3) to be equal over time failed to significantly decrease the fit of the unconstrained model. Thus, on the basis of parsimony, Model 3 was chosen as the final RI-CLPM.

Significant standardized cross-lagged paths and random intercept associations of the final RI-CLPM for family dysfunction, depressive symptoms, and cyberbullying and cybervictimization are summarized in Figure 1. The random intercepts of all variables were significantly correlated ( $r_s = 0.33\text{--}0.69$ ;  $p_s < .001$ ), indicating

**Table 1.** The fit and model comparison results for RI-CLPMs

Model	$\chi^2$	df	RMSEA	CFI	TLI	SRMR	Comparison model	$\Delta$ CFI	$\Delta$ RMSEA	$\Delta$ SRMR
M1: Baseline model (unconstrained model)	275.297	122	0.018	0.984	0.967	0.022				
M2: Model with autoregressive paths fixed to be time-invariant	422.433	134	0.024	0.970	0.944	0.030	M1b VS M1a	>0.01	<0.015	<0.030
<b>M3: Model with cross-lagged paths fixed to be time-invariant</b>	<b>331.885</b>	<b>158</b>	<b>0.017</b>	<b>0.982</b>	<b>0.971</b>	<b>0.024</b>	<b>M1c VS M1a</b>	<b>&lt;0.01</b>	<b>&lt;0.015</b>	<b>&lt;0.030</b>
M4: Model with autoregressive and cross-lagged paths fixed to be time-invariant	474.185	170	0.022	0.968	0.954	0.033	M1d VS M1a	>0.01	<0.015	<0.030

Note. Bold indicates final selected model.



**Fig. 1.** Standardized path coefficients of the final RI-CLPM for family dysfunction, depressive symptoms, cyberbullying and cyber-victimization. Solid lines mean the path coefficients are significant, whereas dotted lines mean the path coefficients are not significant. For simplicity, control variables and within-person concurrent associations are not presented in the figure. RI = Random intercept; FD = Family Dysfunction; DP = Depressive Symptoms; CB = Cyberbullying; CV = Cybervictimization. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

that there were between-person effects linking the stable variances among family dysfunction, depressive symptoms, and cyberbullying and cybervictimization (see Figure 1). Furthermore, the autoregressive paths of each variable were all statistically significant except for the paths from T1/T3 cyberbullying to T2/T4 cyberbullying and the paths from T1/T2 cybervictimization to T2/T3 cybervictimization. The within-person concurrent associations between family dysfunction, depressive symptoms, and cyberbullying and cybervictimization at each time point (see Table S2 in online supplemental materials).

As is shown in Figure 1, the within-person effects from family dysfunction at time T to cyberbullying at time T + 1 were not statistically significant, and vice versa. In comparison, the within-person effects from family dysfunction at time T to cybervictimization

at time T + 1 were not all statistically significant, and vice versa. The within-person effects from family dysfunction at time T to depressive symptoms at time T + 1 were all statistically significant ( $\beta_s = 0.05-0.06$ ,  $ps < .001$ ), and vice versa ( $\beta_s = 0.11$ ,  $ps < .001$ ). The within-person effects from depressive symptoms at time T to cyberbullying at time T + 1 were all statistically significant ( $\beta_s = 0.06$ ,  $ps < .01$ ), but not vice versa, and likewise, the within-person effects from depressive symptoms at time T to cybervictimization at time T + 1 were all statistically significant ( $\beta_s = 0.07-0.08$ ,  $ps < .001$ ), but not vice versa. The results of the roles of control variables in the final RI-CLPM are presented in Table S3 in the online supplemental materials.

Percentile bootstrapping analysis was used to test the indirect paths we hypothesized (i.e., family dysfunction at T → depressive

**Table 2.** Percentile Bootstrapping analysis of the magnitude and statistical significance of indirect effects

Indirect pathways	Standardized indirect effect	95% CI of indirect effect	SE of indirect effect
T1 FD→T2 DP→T3 CB	0.004	0.001, 0.007	0.002
T1 FD→T2 DP→T3 CV	0.003	0.001, 0.006	0.001
T2 FD→T3 DP→T4 CB	0.003	0.001, 0.006	0.001
T2 FD→T3 DP→T4 CV	0.005	0.002, 0.008	0.002
T3 FD→T4 DP→T5 CB	0.004	0.001, 0.007	0.001
T3 FD→T4 DP→T5 CV	0.004	0.001, 0.007	0.001

Note. FD = Family Dysfunction; DP = Depressive Symptoms; CB = Cyberbullying; CV = Cybervictimization.

symptoms at  $T + 1 \rightarrow$  cybervictimization or cyberbullying at  $T + 2$ ; cybervictimization or cyberbullying at  $T \rightarrow$  depressive symptoms at  $T + 1 \rightarrow$  family dysfunction at  $T + 2$ ). The results (see Table 2) showed that the indirect paths from family dysfunction at  $T$  to cyberbullying at  $T + 2$  via depressive symptoms at  $T + 1$  was statistically significant, and the indirect paths from family dysfunction at  $T$  to cybervictimization at  $T + 2$  via depressive symptoms at  $T + 1$  was also statistically significant. Unsurprisingly, the percentile bootstrapping analysis showed that the indirect paths from cybervictimization or cyberbullying at  $T$  to family dysfunction at  $T + 2$  via depressive symptoms at  $T + 1$  were nonsignificant.

## Discussion

This study examined the longitudinal relations among family dysfunction, cyberbullying and cybervictimization, and depressive symptoms in Chinese youths, using RI-CLPM. The findings revealed that the random intercepts of these main variables were significantly correlated at the between-person level, suggesting that family dysfunction, depressive symptoms, and cyberbullying and cybervictimization tend to co-occur during adolescence. At the within-person level, family dysfunction did have a significant effect on cyberbullying and cybervictimization through the indirect effects of depressive symptoms. These results imply that family dysfunction reinforces an increase of depressive symptoms, which ultimately leads to cyberbullying and cybervictimization. On the one hand, the results indicate that family dysfunction is an important factor contributing to increases in youths' depressive symptoms, which is in line with previous findings (Gardner et al., 2019; Humphreys et al., 2020). This can be explained by a developmental extension of the hopelessness theory of depressive symptoms (Rose & Abramson, 1992), which assumes that youths who have experienced family dysfunction are more likely to develop a negative cognitive style, which in turn can increase the risk of depressive symptoms.

On the other hand, the results showed that depressive symptoms significantly predicted cyberbullying at the within-person level, which is also consistent with previous findings (Chu et al.,

2019; Zhang et al., 2020). This can be explained by the Acting Out Model (Carlson & Cantwell, 1980), which argues that individuals who internalize problems tend to express their negative feelings through acting-out behaviors, and those behaviors increase the incidence of conflicts with others, which then elevates the risk of performing criminal or deviant behaviors such as cyberbullying. Moreover, the findings revealed that depressive symptoms significantly predicted cybervictimization at the within-person level, which is also consistent with previous findings (Gao et al., 2021; Rose & Tynes, 2015; Zhang et al., 2020). This can be explained by the symptoms-driven model (Holfeld & Mishna, 2019; Kochel et al., 2012), which argues that adolescents who are depressed or anxious (i.e., internalizing symptoms) are more susceptible to experiences of cybervictimization over time. Youth who report high levels of depressive symptoms often have difficulty suppressing impulsive behaviors, understanding emotions, and accessing effective emotion regulation strategies (Arató et al., 2022). Adaptive emotion regulation strategies contribute to better social competence and functioning (Gross & John, 2003). Youth who lack adaptive social skills may behave inappropriately on the Internet (e.g., unlimited sharing of pictures and/or videos) (Gao et al., 2021); therefore, their behavior might lead to more disclosures and increased risk of cybervictimization (Álvarez-García et al., 2015; Kowalski et al., 2014). Overall, these results suggest that depressive symptoms act as crucial gateways in the longitudinal links from family dysfunction to cyberbullying and to cybervictimization.

Moreover, the results from the RI-CLPM demonstrated that depressive symptoms significantly predicted family dysfunction at the within-person level. These findings corroborated previous research that found mental health problems in youths can increase their risk of experiencing family dysfunction (e.g., Thornberry et al., 2014). One possible reason for that association is that depressive symptoms activate negative self-schemas in the youths themselves, convincing them that they are unlovable and/or worthless (Rudolph et al., 2008). Depressed youths often exhibit behaviors such as manifesting anxiety, crying easily, and being depressed, which in turn are likely to increase their conflict with parents or caregivers in the family and eventually lead to family dysfunction.

Most notably, the results of the RI-CLPM indicated that neither cyberbullying nor cybervictimization predicted depressive symptoms at the within-person level, although the between-person correlations were significant. A great number of studies have found that cyberbullying and cybervictimization were significantly related to depressive symptoms in youth (see the meta-analysis by Marciano et al., 2020). However, most of the existing studies were cross-sectional in nature, and most of the very few longitudinal studies relied on a cross-lagged panel model that did not distinguish between within-person and between-person effects. Differences in analytic approaches (i.e., between-person vs. within-person) also may have contributed to the discrepancy between the previous results and ours. In contrast, we used a random-intercept cross-lagged approach to provide results for the directional relations between cyberbullying or cybervictimization and depressive symptoms at the within-person level. Our findings provided evidence in support of the notion that depressed youths self-select into maladaptive interpersonal relationships (Rudolph et al., 2008), and then those maladaptive interpersonal relationships can extend to the internet and later to involvement in cyberbullying and cybervictimization.

### Strengths, limitations, and future directions

This study has several major strengths. First, using a five-wave longitudinal design with Chinese adolescents, this study investigated the cross-domain effect between family dysfunction and cyberbullying and cybervictimization, and we explored whether depressive symptoms function as mediators. Our findings contribute to the establishment of a causal relations. Second, the application of an RI-CLPM, which is an innovative statistical approach with longitudinal data, allowed us to differentiate within-person effects from between-person effects and thus to provide insights into how family dysfunction, depressive symptoms, and cyberbullying and cybervictimization influence each other at the level of individual children.

This study also has several limitations. First, the data relied on self-reports. Although it would be essential to use self-reported scale to measure family dysfunction, parent-reported family dysfunction may have different results compared to adolescent-reported family dysfunction. This difference between parent and adolescent perceptions may yield meaningful information (Kim, 2005). Moreover, self-reported measure of cyberbullying may exist social desirability, which could jeopardize the internal validity of the results. Thus, it would be interesting to examine the association between family dysfunction, depressive symptoms and cyberbullying and cybervictimization using multiple sources of information (e.g., parents and children). Second, the study focused primarily on general family dysfunction, rather than on specific or distinct dimensions of family dysfunction. Although previous research has not found differences in the relations between different dimensions of family dysfunction and mental health (Mastrotheodoros et al., 2020), it has not explored whether there are differences in the relations between different dimensions of family dysfunction and cyberbullying or cybervictimization. Therefore, future research could explore the relations between different dimensions of family dysfunction, cyberbullying and cybervictimization. Third, the samples came from China, which limits the generalizability of the current findings to other populations with different characteristics (e.g., different races/ethnicities, ages, and socio-cultural backgrounds). For example, under the influence of Confucianism, the family is an important part of daily life in China (Fan, 2000). Thus, family dysfunction may have a greater impact on youth in China than in other Western countries. Additional research will be required to replicate and extend these findings to other cultures and countries.

### Implications

The current study has shown that youths who have experienced family dysfunction are more likely to experience depressive symptoms and subsequently result in more cyberbullying and cybervictimization. Research has found that family support or balanced family cohesion serve as protective roles in the intervention of mental health, cyberbullying and cybervictimization among youth, while an adverse and more conflictual family environment has a negative impact on youth's emotional regulation skills, which translates into a greater likelihood of cyberbullying and cybervictimization (Arató et al., 2022; Rodríguez-Rivas et al., 2022). Intervention efforts thus could be devoted to promoting positive family connections and reducing family conflict, mitigating negative emotions among adolescents. Parents can be offered parenting-skills training courses or workshops specifically about the parent-child relationship and communication in community settings. In addition, the family is the easiest environment to

understand children's Internet behavior, and parents can teach their children how to maintain their cybersecurity. Therefore, parents can also be offered courses on digital literacy and online safety skills to ensure that they have the appropriate skills to supervise their children's online behavior (Rodríguez-de-Dios et al., 2018).

The results suggest that youths with depressive symptoms are at an elevated risk of later involvement in cyberbullying. Thus, addressing the depressive symptoms of adolescents who have been exposed to family adversity could be a key to breaking this vicious cycle between family dysfunction and cyberbullying involvement. Adolescents with high levels of depressive symptoms often have difficulty suppressing impulsive behavior and therefore engage in cyberbullying (e.g., Chen et al., 2017). They may also lack adaptive social skills to build good relationships with others online and make little effort to defend themselves or counterattack the behavior of the bully and receive little assistance from others, which makes them easy targets for cyberbullying, therefore experienced more cybervictimization (e.g., Huang et al., 2021). Past research has demonstrated that good emotional regulation skills, perceived social support and positive interpersonal relationships can reduce youth's experiences of cyberbullying (Holfeld & Leadbeater, 2017). Therefore, educators and parents should increase efforts to provide timely social support and to enhance their ability to regulate emotions and improve their social skills to decrease their likelihood of depressive symptoms translating into cyberbullying involvement.

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**Ethical standards.** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee (School of Psychology Research Ethics Committee, Northwest Normal University) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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### References

- Achenbach, T. M. (1991). *Manual for the youth self-report and 1991 profiles*. University of Vermont Department of Psychiatry.
- Álvarez-García, D., Pérez, J. C. N., González, A. D., & Pérez, C. R. (2015). Risk factors associated with cybervictimization in adolescence. *International Journal of Clinical and Health Psychology, 15*(3), 226–235. <https://doi.org/10.1016/j.ijchp.2015.03.002>
- Arató, N., Zsidó, A. N., Rívnyák, A., Péley, B., & Lábadi, B. (2022). Risk and protective factors in cyberbullying: The role of family, social support and emotion regulation. *International Journal of Bullying Prevention, 4*(2), 160–173. <https://doi.org/10.1007/s42380-021-00097-4>

- Baldry, A. C., Farrington, D. P., & Sorrentino, A.** (2015). Am I at risk of cyberbullying. *Aggression and Violent Behavior, 23*, 36–51. <https://doi.org/10.1016/j.avb.2015.05.014>
- Bollen, K. A.** (2014). *Structural equations with latent variables* (Vol. 210). John Wiley & Sons.
- Buehler, C.** (2020). Family processes and children's and adolescents' well-being. *Journal of Marriage and Family, 82*(1), 145–174. <https://doi.org/10.1111/jomf.12637>
- Buelga, S., Martínez-Ferrer, B., & Cava, M. J.** (2017). Differences in family climate and family communication among cyberbullies, cybervictims, and cyber bully-victims in adolescents. *Computers in Human Behavior, 76*, 164–173. <https://doi.org/10.1016/j.chb.2017.07.017>
- Carlson, G. A., & Cantwell, D. P.** (1980). Unmasking masked depression in children and adolescents. *American Journal of Psychiatry, 137*(4), 445–449. <https://doi.org/10.1176/ajp.137.4.445>
- Chen, F. F.** (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Chen, L., Ho, S. S., & Lwin, M. O.** (2017). A meta-analysis of factors predicting cyberbullying perpetration and victimization: From the social cognitive and media effects approach. *New Media & Society, 19*(8), 1194–1213. <https://doi.org/10.1177/1461444816634037>
- Chu, X. W., Fan, C. Y., Lian, S. L., & Zhou, Z. K.** (2019). Does bullying victimization really influence adolescents' psychosocial problems? A three-wave longitudinal study in China. *Journal of Affective Disorders, 246*, 603–610. <https://doi.org/10.1016/j.jad.2018.12.103>
- Cross, D., Barnes, A., Papageorgiou, A., Hadwen, K., Hearn, L., & Lester, L.** (2015). A social-ecological framework for understanding and reducing cyberbullying behaviours. *Aggression and Violent Behavior, 23*, 109–117. <https://doi.org/10.1016/j.avb.2015.05.016>
- De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J.** (2009). Developmental changes in adolescents' perceptions of relationships with their parents. *Journal of Youth and Adolescence, 38*(1), 75–88. <https://doi.org/10.1007/s10964-008-9286-7>
- Epstein, N. B., Bishop, D. S., & Levin, S.** (1978). The McMaster model of family functioning. *Journal of Marital and Family Therapy, 4*(4), 19–31. <https://doi.org/10.1111/j.1752-0606.1978.tb00537.x>
- Fan, Y.** (2000). A classification of Chinese culture. *Cross Cultural Management: An International Journal, 7*(2), 3–10. <https://doi.org/10.1108/13527600010797057>
- Gámez-Guadix, M., Orue, I., Smith, P. K., & Calvete, E.** (2013). Longitudinal and reciprocal relations of cyberbullying with depression, substance use, and problematic internet use among adolescents. *Journal of Adolescent Health, 53*(4), 446–452. <https://doi.org/10.1016/j.jadohealth.2013.03.030>
- Gao, L., Liu, J., Yang, J., & Wang, X.** (2021). Longitudinal relationships among cybervictimization, peer pressure, and adolescents' depressive symptoms. *Journal of Affective Disorders, 286*, 1–9. <https://doi.org/10.1016/j.jad.2021.02.049>
- Gardner, M. J., Thomas, H. J., & Erskine, H. E.** (2019). The association between five forms of child maltreatment and depressive and anxiety disorders: A systematic review and meta-analysis. *Child Abuse & Neglect, 96*, 104082. <https://doi.org/10.1016/j.chiabu.2019.104082>
- Gong, X., Huebner, E. S., & Tian, L.** (2022). Longitudinal relations between child maltreatment in families and psychological maltreatment by teachers: The mediating roles of internalizing and externalizing problems among Chinese children. *Journal of Interpersonal Violence, 08862605221104524*. <https://doi.org/10.1177/08862605221104524>
- Gross, J. J., & John, O. P.** (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348–362. <https://doi.org/10.1037/0022-3514.85.2.348>
- Guo, L., Tian, L., & Huebner, E. S.** (2018). Family dysfunction and anxiety in adolescents: A moderated mediation model of self-esteem and perceived school stress. *Journal of School Psychology, 69*, 16–27. <https://doi.org/10.1016/j.jsp.2018.04.002>
- Hamaker, E. L., Kuiper, R. M., & Grasman, R. P.** (2015). A critique of the cross-lagged panel model. *Psychological Methods, 20*(1), 102–116. <https://doi.org/10.1037/a0038889>
- Holfeld, B., & Leadbeater, B. J.** (2017). Concurrent and longitudinal associations between early adolescents' experiences of school climate and cyber victimization. *Computers in Human Behavior, 76*, 321–328. <https://doi.org/10.1016/j.chb.2017.07.037>
- Holfeld, B., & Mishna, F.** (2019). Internalizing symptoms and externalizing problems: Risk factors for or consequences of cyber victimization? *Journal of Youth and Adolescence, 48*(3), 567–580. <https://doi.org/10.1007/s10964-018-0974-7>
- Hong, J. S., Kim, D. H., Thornberg, R., Kang, J. H., & Morgan, J. T.** (2018). Correlates of direct and indirect forms of cyberbullying victimization involving South Korean adolescents: An ecological perspective. *Computers in Human Behavior, 87*, 327–336. <https://doi.org/10.1016/j.chb.2018.06.010>
- Huang, J., Huebner, E. S., & Tian, L.** (2021). Stability and changes in traditional and cyberbullying perpetration and victimization in childhood: The predictive role of depressive symptoms. *Journal of Interpersonal Violence, 37*, NP17300–NP17324. <https://doi.org/10.1177/08862605211028004>
- Humphreys, K. L., LeMoult, J., Wear, J. G., Piersiak, H. A., Lee, A., & Gotlib, I. H.** (2020). Child maltreatment and depression: A meta-analysis of studies using the Childhood Trauma Questionnaire. *Child Abuse & Neglect, 102*, 104361. <https://doi.org/10.1016/j.chiabu.2020.104361>
- Kapetanovic, S., Boele, S., & Skoog, T.** (2019). Parent-adolescent communication and adolescent delinquency: Unraveling within-family processes from between-family differences. *Journal of Youth and Adolescence, 48*(9), 1707–1723. <https://doi.org/10.1007/s10964-019-01043-w>
- Kashian, N.** (2021). The impact of media use on the spillover and crossover effect of couple conflict. *New Media & Society, 146144482110148*. <https://doi.org/10.1177/1461444821101481>
- Kaufman, T. M., Kretschmer, T., Huitsing, G., & Veenstra, R.** (2020). Caught in a vicious cycle? Explaining bidirectional spillover between parent-child relationships and peer victimization. *Development and Psychopathology, 32*(1), 11–20. <https://doi.org/10.1017/S0954579418001360>
- Kim, K. H.** (2005). The relation among fit indexes, power, and sample size in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal, 12*(3), 368–390. [https://doi.org/10.1207/s15328007sem1203\\_2](https://doi.org/10.1207/s15328007sem1203_2)
- Kim, Y., Richards, J. S., & Oldehinkel, A. J.** (2022). Self-control, mental health problems, and family functioning in adolescence and young adulthood: Between-person differences and within-person effects. *Journal of Youth and Adolescence, 51*(6), 1181–1195. <https://doi.org/10.1007/s10964-021-01564-3>
- Klasen, F., Otto, C., Kriston, L., Patalay, P., Schlack, R., & Ravens-Sieberer, U.** (2015). Risk and protective factors for the development of depressive symptoms in children and adolescents: Results of the longitudinal BELLA study. *European Child & Adolescent Psychiatry, 24*(7), 695–703. <https://doi.org/10.1007/s00787-0140637-5>
- Kline, R. B.** (2015). *Principles and practice of structural equation modeling*. Guilford Publications.
- Kochel, K. P., Ladd, G. W., & Rudolph, K. D.** (2012). Longitudinal associations among youth depressive symptoms: An interpersonal process perspective. *Child Development, 83*(2), 637–650. <https://doi.org/10.1111/j.1467-8624.2011.01722.x>
- Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R.** (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin, 140*(4), 1073–1137. <https://doi.org/10.1037/a0035618>
- Kowalski, R. M., Limber, S. P., & McCord, A.** (2019). A developmental approach to cyberbullying: Prevalence and protective factors. *Aggression and Violent Behavior, 45*, 20–32. <https://doi.org/10.1016/j.avb.2018.02.009>
- Kwan, I., Dickson, K., Richardson, M., MacDowall, W., Burchett, H., Stansfield, C., Brunton, G., Sutcliffe, K., & Thomas, J.** (2020). Cyberbullying and children and young people's mental health: A systematic map of systematic reviews. *Cyberpsychology, Behavior, and Social Networking, 23*(2), 71–82. <https://doi.org/10.1089/cyber.2019.0370>
- Li, X., Huebner, E. S., & Tian, L.** (2021). Vicious cycle of emotional maltreatment and bullying perpetration/victimization among early adolescents: Depressive symptoms as a mediator. *Social Science & Medicine, 291*, 114483. <https://doi.org/10.1016/j.socscimed.2021.114483>
- Little, R. J., & Rubin, D. B.** (2002). *Statistical analysis with missing data*. Wiley. <https://doi.org/10.1002/9781119013563>



- Liu, Q. Q., Yang, X. J., Hu, Y. T., Zhang, C. Y., & Nie, Y. G. (2020). How and when is family dysfunction associated with adolescent mobile phone addiction? Testing a moderated mediation model. *Children and Youth Services Review, 111*, 104827. <https://doi.org/10.1016/j.chilcyouth.2020.104827>
- López-Castro, L., & Priegue, D. (2019). Influence of family variables on cyberbullying perpetration and victimization: A systematic literature review. *Social Sciences, 8*(3), 98. <https://doi.org/10.3390/socsci8030098>
- Marciano, L., Schulz, P. J., & Camerini, A. L. (2020). Cyberbullying perpetration and victimization in youth: A meta-analysis of longitudinal studies. *Journal of Computer-Mediated Communication, 25*(2), 163–181. <https://doi.org/10.1093/jcmc/zmz031>
- Mastrotheodoros, S., Canário, C., Gugliandolo, M. C., Merkas, M., & Keijsers, L. (2020). Family functioning and adolescent internalizing and externalizing problems: Disentangling between-, and within-family associations. *Journal of Youth and Adolescence, 49*(4), 804–817. <https://doi.org/10.1007/s10964-019-01094-z>
- Nie, Q., Tian, L., & Huebner, E. S. (2020). Relations among family dysfunction, loneliness and life satisfaction in Chinese children: A longitudinal mediation model. *Child Indicators Research, 13*(3), 839–862. <https://doi.org/10.1007/s12187-019-09650-6>
- Nocentini, A., Fiorentini, G., Di Paola, L., & Menesini, E. (2019). Parents, family characteristics and bullying behavior: A systematic review. *Aggression and Violent Behavior, 45*, 41–50. <https://doi.org/10.1016/j.avb.2018.07.010>
- Ortega Barón, J., Postigo, J., Iranzo, B., Buelga, S., & Carrascosa, L. (2019). Parental communication and feelings of affiliation in adolescent aggressors and victims of cyberbullying. *Social Sciences, 8*(1), 3. <https://doi.org/10.3390/socsci8010003>
- Orth, U., Clark, D. A., Donnellan, M. B., & Robins, R. W. (2021). Testing prospective effects in longitudinal research: Comparing seven competing cross-lagged models. *Journal of Personality and Social Psychology, 120*(4), 1013–1034. <https://doi.org/10.1037/pspp0000358>
- Parke, R. D., & Ladd, G. W. (2016). *Family-peer relationships: Modes of linkage*. Routledge.
- Rodríguez-de-Dios, I., van Oosten, J. M., & Igartua, J. J. (2018). A study of the relationship between parental mediation and adolescents' digital skills, online risks and online opportunities. *Computers in Human Behavior, 82*, 186–198. <https://doi.org/10.1016/j.chb.2018.01.012>
- Rodríguez-Rivas, M. E., Varela, J. J., González, C., & Chuecas, M. J. (2022). The role of family support and conflict in cyberbullying and subjective well-being among Chilean adolescents during the Covid-19 period. *Heliyon, 8*(4), e09243. <https://doi.org/10.1016/j.heliyon.2022.e09243>
- Romero-Abrio, A., Martínez-Ferrer, B., Musitu-Ferrer, D., León-Moreno, C., Villarreal-González, M. E., & Callejas-Jerónimo, J. E. (2019). Family communication problems, psychosocial adjustment and cyberbullying. *International Journal of Environmental Research and Public Health, 16*(13), 2417–2430. <https://doi.org/10.3390/ijerph16132417>
- Rose, C. A., & Tynes, B. M. (2015). Longitudinal associations between cyber-victimization and mental health among US adolescents. *Journal of Adolescent Health, 57*(3), 305–312. <https://doi.org/10.1016/j.jadohealth.2015.05.002>
- Rose, D. T., & Abramson, L. Y. (1992). Developmental predictors of depressive cognitive style: Research and theory. In D. Cicchetti, & S. L. Toth (Eds.), *Developmental perspectives on depression* (pp. 323–349). University of Rochester Press.
- Rudolph, K. D., Flynn, M., & Abaied, J. L. (2008). A developmental perspective on interpersonal theories of youth depression. In J. R. Abela, & B. L. Hankin (Eds.), *Handbook of depression in children and adolescents* (pp. 79–102). Guilford.
- Su, L., Yang, Z., Wan, G., Luo, X., & Li, X. (1999). Child behavior checklist used for Chinese children aged 6–11. *Chinese Journal of Clinical Psychology, 7*, 70–73.
- Thornberry, T. P., Matsuda, M., Greenman, S. J., Augustyn, M. B., Henry, K. L., Smith, C. A., & Ireland, T. O. (2014). Adolescent risk factors for child maltreatment. *Child Abuse & Neglect, 38*(4), 706–722. <https://doi.org/10.1016/j.chiabu.2013.08.009>
- Timmons, A. C., & Margolin, G. (2015). Family conflict, mood, and adolescents' daily school problems: Moderating roles of internalizing and externalizing symptoms. *Child Development, 86*(1), 241–258. <https://doi.org/10.1111/cdev.12300>
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior, 26*(3), 277–287. <https://doi.org/10.1016/j.chb.2009.11.014>
- Topcu, Ç., & Erdur-Baker, Ö. (2018). RCBI-II: The second revision of the revised cyber bullying inventory. *Measurement and Evaluation in Counseling and Development, 51*(1), 32–41. <https://doi.org/10.1080/07481756.2017.1395705>
- UNICEF. (2019). UNICEF poll: More than a third of young people in 30 countries report being a victim of online bullying. Retrieved April 8, 2020, from <https://www.unicef.org/press-releases/unicef-poll-morethird-young-people-30-countries-report-being-victim-onlinebullying>
- Wang, Y., Tian, L., Guo, L., & Huebner, E. S. (2020). Family dysfunction and Adolescents' anxiety and depression: A multiple mediation model. *Journal of Applied Developmental Psychology, 66*, 101090. <https://doi.org/10.1016/j.appdev.2019.101090>
- Yuan, G., & Liu, Z. (2021). Longitudinal cross-lagged analyses between cyberbullying perpetration, mindfulness and depression among Chinese high school students. *Journal of Health Psychology, 26*(11), 1872–1881. <https://doi.org/10.1177/135910531989903>
- Zhang, D., Huebner, E. S., & Tian, L. (2020). Longitudinal associations among neuroticism, depression, and cyberbullying in early adolescents. *Computers in Human Behavior, 112*, 106475. <https://doi.org/10.1016/j.chb.2020.106475>
- Zhao, H., Gong, X., Huebner, E. S., Yang, X., & Zhou, J. (2022). Cyberbullying victimization and nonsuicidal self-injury in adolescents: Testing a moderated mediating model of emotion reactivity and dispositional mindfulness. *Journal of Affective Disorders, 299*, 256–263. <https://doi.org/10.1016/j.jad.2021.11.070>
- Zhou, J., Gong, X., Lu, G., Xu, X., Zhao, H., & Yang, X. (2022). Bidirectional spillover between maladaptive parenting and peer victimization and the mediating roles of internalizing and externalizing problems: A within-person analysis among Chinese early adolescents. *Development and Psychopathology, 1–17*. <https://doi.org/10.1017/S0954579422000682>
- Zych, I., Farrington, D. P., & Ttofi, M. M. (2019). Protective factors against bullying and cyberbullying: A systematic review of meta-analyses. *Aggression and Violent Behavior, 45*, 4–19. <https://doi.org/10.1016/j.avb.2018.06.008>