Parental Psychological Control and Adolescent Aggressive Behavior: Deviant Peer Affiliation as a Mediator and School Connectedness as a Moderator

Yunlong Tian1,2†, Chengfu Yu1,2*, Shuang Lin1,2†, Junming Lu3, Yi Liu3 and Wei Zhang4**

1 School of Education, Guangzhou University, Guangzhou, China, 2 School of Education, Center for Brain and Cognitive Sciences, Guangzhou University, Guangzhou, China, 3 Faculty of Social and Public Administration, Guangdong Baiyun University, Guangzhou, China, 4 School of Psychology, South China Normal University, Guangzhou, China

Open Access

Edited by: Claudio Longobardi, University of Turin, Italy
Reviewed by: Xia Liu, Beijing Normal University, China; Stefano Comai, Vita-Salute San Raffaele University, Italy
*Correspondence: Chengfu Yu cnwhycf@163.com; Wei Zhang zhangwei@scnu.edu.cn
† Shared first authorship
Specialty section: This article was submitted to Educational Psychology, a section of the journal Frontiers in Psychology
Received: 24 August 2018
Accepted: 05 February 2019
Published: 21 February 2019

Citation: Tian Y, Yu C, Lin S, Lu J, Liu Y and Zhang W (2019) Parental Psychological Control and Adolescent Aggressive Behavior: Deviant Peer Affiliation as a Mediator and School Connectedness as a Moderator. Front. Psychol. 10:358. doi: 10.3389/fpsyg.2019.00358

INTRODUCTION

Aggressive behavior is a highly prevalent problem behavior that often occurs in adolescence. According to DSM-V, aggressive behavior is a widely prevalent symptom in psychiatric diseases, such as anxiety disorder, autism, and adjustment disorder (Takahashi et al., 2011). In the psychological studies, aggressive behavior has been generally defined as any behavior that has intention of causing harm to others who want to avoid being harmed (Anderson and Bushman, 2002; Bettencourt et al., 2006; Cabello et al., 2017). Furthermore, researchers describe aggressive behavior as defensive and premeditated (Takahashi et al., 2011). The previous studies found that aggressive behavior correlates significantly with several kinds of negative outcomes for both
aggressors and victims of aggression, including tension and sleeping problems in aggressors, as well as depression and loneliness in victims (Becht et al., 2016; Cabello et al., 2017). Furthermore, early-life aggressive behavior is a risk factor for having serious problems with aggressive behavior in later life (Calkins and Keane, 2009). Therefore, understanding the development of aggressive behavior in adolescence is essential for the development of protective intervention programs.

Parental psychological control is an important negative parenting type that refers to parental control of the adolescent's psychological world, and it includes tactics such as love withdrawal, devaluation, and guilt induction. The main aim of psychological control is to keep the adolescent emotionally dependent on the parents (Symeou and Georgiou, 2017). Ample research evidence has repeatedly shown that psychological control is a widely-used tactic in parenting, and it is an important predictor of adolescent aggressive behavior (Nelson et al., 2013; Cui et al., 2014). For instance, Nelson et al. (2013) found that parental psychological control predicts adolescent relational and physical aggression.

### Deviant Peer Affiliation as a Mediator

During adolescence, time spent with family steadily decreases and an increasing amount of time is spent in the company of peers (Zhu et al., 2016; Lin et al., 2018; Tian et al., 2019). Prior research has repeatedly shown that affiliate with deviant peers plays an important role in shaping adolescent problem behaviors including aggressive behavior (Longobardi et al., 2017; Zhu et al., 2017; Lin et al., 2018). According to the social development model (Hawkins and Weis, 1985; Choi et al., 2005), parental psychological control may promote the risk of adolescents affiliating with deviant peers, which in turn may increase adolescent delinquencies such as aggressive behavior. In line with the social development model (Hawkins and Weis, 1985), there is ample research evidence demonstrating the mediating role of deviant peer affiliation in the relation between negative parenting and adolescent problem behaviors including aggressive behavior (Hinnant et al., 2015; Zhu et al., 2017). For example, with a longitudinal study of aggression in Chinese students from grades 7 to 9, Zhu et al. (2017) reported that deviant peer affiliation mediated the effect of parental corporal punishment on adolescent physical aggression.

First, excessive psychological intervention by high-controlling parents may lead adolescents to acquire an interpersonal-control model of psychological control, which may force adolescents to affiliate with deviant peers (Cook and Fletcher, 2012; Zhu et al., 2017). This is due to parental psychological control having a negative effect on adolescent friendship, which has been observed within a wide range of adolescent friendships, such as peer relation (Oudekerk et al., 2015) and peer rejection (Janssens et al., 2017). Meanwhile, poor social skills and negative relationships with conventional peers could positively predict deviant peer affiliation (Rudolph et al., 2014). Second, adolescents learn behavior patterns from their delinquent peers via observation and imitation, which in turn increase the risk of aggressive behavior (Bandura, 1977; Wang et al., 2017). Thus, parental psychological control may increase the risk of developing deviant peer affiliation through shape adolescents’ cognition of peer interaction (Cook and Fletcher, 2012; Zhu et al., 2017); which in turn would cause higher levels of aggression. Therefore, in this study, we propose the following hypothesis.

**Hypothesis 1:** Deviant peer affiliation will mediate the relationship between parental psychological control and adolescent aggressive behavior.

### School Connectedness as a Moderator

Although parental psychological control poses a crucial risk for adolescent aggressive behavior and deviant peer affiliation, adolescents can still achieve resilient positive outcomes. According to the stress-buffering model (Cohen and Wills, 1985), there are several protective factors that could mitigate the effect of environmental risk on the onset of aggressive behaviors. One such factor is school connectedness, which includes interactions between the adolescent and peers, between the adolescent and teachers, and between the adolescent and other significant members of the school (Fredricks et al., 2004). A few researchers have found that school connectedness moderates the impact of family factors. For example, Loukas et al. (2010) found a protective role of adolescent school connectedness against effects of negative parenting. In other words, school connectedness acts as a buffer for the negative effects of negative family relations on delinquent behaviors (Loukas et al., 2010). Other studies have found that school connectedness interacts with various social-environmental factors, such as parenting (Loukas et al., 2010) and peer factors (Millings et al., 2012; Rudasill et al., 2014; Oldfield et al., 2018), on adolescent behaviors. Further, other studies have shown that lower levels of school connectedness are positively correlated with aggressive behavior, while higher levels of school connectedness have important protective effects for adolescent development (Millings et al., 2012; Oldfield et al., 2018).

According to the stress-buffering model (Cohen and Wills, 1985), adolescents with strong school connectedness are more likely to accept the school’s norms, values, and expectations, and to refrain from aggressive behavior, given that problematic behaviors are inconsistent with the regulations of the school (Loukas and Pasch, 2013; Liu et al., 2016). Moreover, adolescents with high school connectedness may recognize the negative effects of psychological control and deviant peer affiliation, and they may be buffered by desire to obey the rules or fear of getting caught (Loukas and Pasch, 2013; Liu et al., 2016; Loke et al., 2016). Finally, school connectedness may be protective for adolescents under psychological control, by motivating them to conform to social regulations and by decreasing the likelihood of their engaging in deviant activities (Liu et al., 2016). Based on these theoretical suggestions and indirect experimental evidence, we expect that school connectedness would weaken the mediating effect of deviant peer affiliation toward the influence of psychological control on adolescent aggression. Therefore, we proposed the following hypothesis:

**Hypothesis 2:** School connectedness will moderate the indirect relation between parental psychological control and adolescent aggressive behavior. This indirect association will be stronger among adolescents with low levels of school connectedness.
but much weaker among adolescents with high levels of school connectedness.

The Present Study
As noted, previous research has examined the role of parental psychological control on aggressive behavior by adolescents, but less is known about the mediating and moderating mechanisms and the various factors affecting this relationship, such as deviant peer affiliation and school connectedness. Grounded in the social development model and stress-buffering model, this study investigated whether deviant peer affiliation mediates the relationship between parental psychological control and adolescent aggressive behavior, and whether this indirect link is moderated by school connectedness. Figure 1 illustrates the proposed research model.

MATERIALS AND METHODS

Participant
The participants in this study were recruited from eleven schools in Guangdong province, southern China, through stratified and random cluster sampling. A total of 4265 adolescents (2074 boys) between the ages of 9 and 19 (Mean age = 13.66, SD = 2.74) participated. Reflecting the demographics of the sample, 54.35% of participants’ fathers and 62.49% of their mothers have less than a high school education; 39.22% come from rural areas, 43.20% from small-medium cities, and 17.58% from metropolitan areas. Moreover, 55.79% come from families with an average monthly income between ¥1000 to ¥5000, equivalent to about $148 to $738. The average personal monthly household income in China (2018) is ¥1753, equivalent to about $259.

Measures

Parental Psychological Control
The eight-item Psychological Control Scale-Youth Self-report was used to measure the psychological control of participants’ parents (Barber, 1996). In this scale, adolescents report their perceptions of the extent to which parents have engaged in psychologically controlling behaviors (i.e., love withdrawal, devaluation, and guilt induction) in the past half year. A sample item is “My parents tell me that I should feel guilty when I do not meet their expectations.” Each item was rated on a scale from 1 (Never) to 3 (Always). The mean of the eight items was calculated, with higher scores reflecting higher parental psychological control. Cronbach’s α was 0.79.

Deviant Peer Affiliation
Adolescent reported on their deviant peer affiliation using the Chinese version of the Deviant Peers Questionnaire (Zhu et al., 2015). Twelve items that index deviant peer affiliation assessed how many of students’ peers had displayed deviant behaviors in the past half year. A sample item is “How many of your friends got involved in fights during the past six months?” Each item was rated on a scale from 1 (Never) to 3 (Six or more times). The mean of the 12 items was calculated, with higher scores reflecting higher deviant peer affiliation. Cronbach’s α was 0.88.

School Connectedness
The Emotional Engagement Subscale of the School Engagement Scale assessed adolescents’ school connectedness (Wang et al., 2011). This subscale consists of eight items, scored on a 5-point Likert scale (that is, from 1 = Strongly disagree to 5 = Strongly agree), and asks participants to report the extent of their connectedness with their school, with items such as “In general, I feel like a real part of this school.” The mean of the eight items was calculated, with higher scores reflecting higher school connectedness. Cronbach’s α was 0.76.

Aggressive Behavior
Participants reported on their own aggressive behaviors using the Chinese version of the Buss–Warren aggression questionnaire (BWAQ) (Maxwell, 2008; Lin et al., 2018). In the current study, 19 items were used indicating levels of physical, relationship,
and verbal aggression behaviors during the past 6 months, such as “Once in a while, I can’t control the urge to strike another person.” Responses are rated on a 5-point scale (from 1 = Not at all to 5 = Absolutely like me). The mean of the 19 items was calculated, with higher scores reflecting more aggressive behavior. Cronbach’s α was 0.88.

Procedure
Ethics approval for this study was obtained from the Certification of Ethics Review Committee of Education School, Guangzhou University. Written informed consent was obtained from the students’ teachers, all adult participants, and the parents/legal guardians of all non-adult participants. The data was collected by trained psychology teachers or graduate students in psychology. To encourage honest reporting, participants were assured that their answers would be kept confidential. They were requested to complete the anonymous questionnaires by themselves and were also told that they were free to withdraw any time during this study.

Statistical Analyses
SPSS 20.0 was utilized for descriptive statistics. We used Mplus 7.1 to perform structural equation modeling in order to examine mediation and moderation effects (Muthén and Muthén, 1998–2012). In this study, less than 2% of data is missing, and the missing data was handled with full-information maximum likelihood estimation.

RESULTS
Descriptive Statistics
Table 1 displays the means and standard deviations of the variables and the Pearson product-moment correlations for all variables in the current study. The results showed a significant, positive relation between parental psychological control and aggressive behavior. In addition, school connectedness was negatively associated with deviant peer affiliation and aggressive behavior, whereas deviant peer affiliation was positively associated with aggressive behavior.

Testing for a Mediation Effect
The mediation model revealed that the model is identified to the data: \( \chi^2/df = 2.14, CFI = 0.99, RMSEA = 0.023 \). The results are displayed in Figure 2. Parental psychological control positively predicted deviant peer affiliation \((b = 0.16, SE = 0.02, t = 9.78, p < 0.01)\) and positively predicted aggressive behavior \((b = 0.25, SE = 0.02, t = 13.21, p < 0.01)\), while deviant peer affiliation also positively predicted aggressive behavior \((b = 0.23, SE = 0.02, t = 12.40, p < 0.01)\). Moreover, bootstrapping analyses indicated that deviant peer affiliation partially mediated the relation between parental psychological control and aggressive behavior \((\text{indirect effect} = 0.0352, SE = 0.0055, 95\% \text{CI} = [0.0249, 0.0471])\).

Testing for Moderated Mediation
The moderated mediation model represented in Figure 3 had an excellent fit to the data: \( \chi^2/df = 2.69, CFI = 0.99, RMSEA = 0.034 \). The results showed that school connectedness moderated the association between parental psychological control and deviant peer affiliation \((b = -0.05, SE = 0.02, t = -2.02, p < 0.05)\). We conducted a simple slopes test, and as depicted in Figure 4, the positive association between parental psychological control and deviant peer affiliation was much stronger for adolescents with lower school connectedness \((b = 0.17, SE = 0.02, t = 7.82, p < 0.01)\) than for adolescents with higher school connectedness \((b = 0.10, SE = 0.02, t = 4.65, p < 0.01)\). Moreover, parental psychological control was positively linked to aggressive behavior \((b = 0.23, SE = 0.02, t = 12.14, p < 0.01)\), as was deviant peer affiliation \((b = 0.21, SE = 0.02, t = 10.57, p < 0.01)\). However, there was no significant interaction between school connectedness and deviant peer affiliation in predicting aggressive behavior \((b = -0.03, SE = 0.03, t = -1.15, p > 0.05)\).

The results revealed that conditional indirect effects were significant for adolescents with lower school connectedness \((\text{indirect effect} = 0.0375, SE = 0.0079, 95\% \text{CI} [0.0235, 0.0546])\) and for those with higher school connectedness \((\text{indirect effect} = 0.0196, SE = 0.0070, 95\% \text{CI} [0.0082, 0.0370])\). Adolescents with lower school connectedness were more likely to associate with deviant peers, which in turn contributed to higher levels of aggressive behavior.

DISCUSSION
The purpose of this study was to investigate the mediating and moderating mechanisms underlying the relationship between parental psychological control and adolescent aggressive behavior.
behavior. Based on the social development model and stress-buffering model, we hypothesized that deviant peer affiliation would mediate the relationship between parental psychological control and adolescent aggressive behavior, and that school connectedness would moderate the indirect association. By investigating these mechanisms, we would be able to identify effective family and school interventions for reducing the risk of adolescent aggressive behaviors.

First, this study found that adolescent aggression is affected by parental psychological control via deviant peer affiliation. This result is consistent with Hypothesis 1 and the social development model (Hawkins and Weis, 1985; Choi et al., 2005), indicating that experiencing psychological control from parents affects adolescents’ tendencies for aggressive behavior. When adolescents experience higher levels of psychological control from their parents, they are more likely to affiliate with deviant peers, which in turn promotes aggressive behavior. According to the social development model, adolescents with high levels of parental psychological control may acquire patterns of interpersonal-control (Cook and Fletcher, 2012; Zhu et al., 2017), which in turn may increase the likelihood of negative peer relationships such as deviant peer affiliation (Oudekerk et al., 2015). Furthermore, when adolescents affiliate with delinquent peers, they are more likely to exhibit aggressive behavior because of learning behavior patterns through processes of peer pressure, modeling, and norms (Bandura, 1977; Wang et al., 2017).

Second, this study found that the indirect link “parental psychological control → deviant peer affiliation → aggressive behavior” is stronger for adolescents with low school connectedness than adolescents with high school connectedness. This finding indicates that school connectedness interacts with a parenting factor (parental psychological control) to amplify the mediating processes. Further, the results indicate that school connectedness only moderates the first stage of the mediating effect (i.e., parental psychological control → deviant peer affiliation). This finding is partially consistent with our hypothesis 2 and the stress-buffering model (Cohen and Wills, 1985), in which strong school connectedness protects against deviant peer affiliation under psychological control, presumably because strong school connectedness motivates adolescents to conform to social regulations and decreases the likelihood of their involvement in deviant peer groups (Loukas et al., 2010; Liu et al., 2016). These findings show that school connectedness decreases the influence of the parental psychological control on deviant peer affiliation in adolescents (Loukas et al., 2010). However, the moderating effects of school connectedness on relations between parental psychological control, deviant peer affiliation, and adolescent aggressive behavior are not significant. This could be because such connectedness principally reflects their relationships with others at school (Millings et al., 2012). Therefore, it could buffer the adverse effects concerning social process (i.e., deviant peer affiliation) but could not buffer behavioral outcomes of parental psychological control. In addition, a number of empirical studies have shown that deviant peer affiliation robustly predicts adolescent problem behaviors (Li et al., 2016; Ding et al., 2017), therefore, school connectedness may not be enough to buffer these adverse effects. Future studies are needed to further find important moderators between deviant peer affiliation and adolescent development.

**IMPLICATIONS AND LIMITATIONS**

This study examined the mediating and moderating mechanism between parental psychological control and adolescent aggressive
behavior in a large sample. These findings provide some targeted intervention suggestions for reducing the risk of adolescent aggressive behavior. First, we provide evidence that parental psychological control might increase the risk of adolescent aggressive behavior. These results suggest that parents should avoid controlling their adolescents' psychological world in family life, as it might cause them to develop aggressive behavior. Second, consistent with the social development model (Hawkins and Weis, 1985; Choi et al., 2005), this study demonstrated the important mediating role of deviant peer affiliation. This result suggests that parents and teachers should provide a positive model of friendship (Cook and Fletcher, 2012; Zhu et al., 2017), and they should help adolescents to develop positive relationships with their friends (Bandura, 1977; Wang et al., 2017), in order to decrease their risk for adopting aggressive behavior. Third, we investigated why some adolescents, despite exposure to parental psychological control, do not show high levels of aggressive behavior. Our results suggest that adolescents with high levels of connectedness with their school may buffer their risk for adopting aggressive behavior. These findings suggest that school educators can effectively help adolescents (especially those with high parental psychological control) avoid developing aggressive behavior by increasing their connectedness with the school.

Several limitations should be considered in the interpretation and generalizability of the present findings. First, even though we used a large sample to test the moderation and mediation models of adolescent problem behavior, our cross-sectional design questionnaire method does not permit us to establish a causal direction. Future studies should use longitudinal designs or other methods to verify the causal relationships. Second, all data was reported by adolescents, who may not have been fully informed in assessing information about parental psychological control and peer affiliation. We need to be cautious about possible bias, including self-presentation biases (Williams et al., 1989; Longobardi et al., 2018; Settanni et al., 2018). Future studies should also include data reports from parents, peers, and teachers, in order to elicit more accurate information. Third, in this study, we have focused on several factors to explain the mediating and moderating mechanisms of adolescent aggressive behavior. However, there are also other factors that have important roles in adolescent aggressive behaviors, such as parental corporal punishment, social status of adolescents, and student-teacher relationships (Zhu et al., 2017; Longobardi et al., 2018). Finally, previous research has shown that the development of adolescent aggressive behavior is significantly affected by disorders such as ADHD (Farbiash et al., 2014), autism (Singh et al., 2011), depression (Marsh et al., 2016), and so on. Therefore, further research needs to include these factors as independent variables or control variables to better understand the etiology of adolescent aggressive behavior.

AUTHOR CONTRIBUTIONS
YT, CY, and WZ conceived and designed the research. YT and CY performed the research. YT, CY, and SL analyzed the data. YT, CY, and SL contributed to the writing of the manuscript. YT, CY, SL, JL, YL, and WZ revised the paper critically for important intellectual content, commented on, and approved the final manuscript.

FUNDING
This study was supported by Guangzhou University’s 2017 training program for young top-notch personals (BJ201725), National Natural Science Foundation of China (31600901 and 31671154), the 13th Five-Year Plan for the development of philosophy and social sciences of Guangzhou (2016GZGJ93), and the youth project of social sciences for the universities belonged to Guangzhou city (1201630586).

REFERENCES
Anderson, C. A., and Bushman, B. J. (2002). Human aggression. Annu. Rev. Psychol. 53, 27–51. doi: 10.1146/annurev.psych.53.100901.135231
Bandura, A. (1977). Social Learning Theory. Oxford: Prentice-Hall.
Barber, B. K. (1996). Parental psychological control: revisiting a neglected construct. Child Dev. 67, 3296–3319. doi: 10.2307/1131780
Becht, A. I., Prinzie, P., Deković, M., van den Akker, A. L., and Shiner, R. L. (2016). Child personality facets and overreactive parenting as predictors of aggression and rule-breaking trajectories from childhood to adolescence. Dev. Psychopathol. 28, 399–413. doi: 10.1017/S0955794115000577
Bettencourt, B. A., Talley, A., Benjamin, A. J., and Valentine, J. (2006). Personality and aggressive behavior under provoking and neutral conditions: a meta-analytic review. Psychol. Bull. 132, 751–777. doi: 10.1037/0033-2909.132.5.751
Cabello, R., Gutiérrez-Cobo, M. J., and Fernández-Berrocal, P. (2017). Parental education and aggressive behavior in children: a moderated-mediation model for inhibitory control and gender. Front. Psychol. 8:1181. doi: 10.3389/fpsyg.2017.01181
Calkins, S. D., and Keane, S. P. (2009). Developmental origins of early antisocial behavior. Dev. Psychopathol. 21, 1095–1109. doi: 10.1017/s095579410999006x
Choi, Y., Harachi, T. W., Gillmore, M. R., and Catalano, R. F. (2005). Applicability of the social development model to urban ethnic minority youth: examining the relationship between external constraints, family socialization, and problem behaviors. J. Res. Adolesc. 15, 505–534. doi: 10.1111/j.1532-7795.2005.00109.x
Cohen, S., and Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. Psychol. Bull. 98, 310–357. doi: 10.1037/0033-2909.98.2.310
Cook, E. C., and Fletcher, A. C. (2012). A process model of parenting and adolescents’ friendship competence. Soc. Dev. 21, 461–481. doi: 10.1111/j.1467-9507.2011.00642.x
Cui, L., Morris, A. S., Criss, M. M., Houlberg, B. J., and Silk, J. S. (2014). Parental psychological control and adolescent adjustment: the role of adolescent emotion regulation. Parent Sci. Pract. 14, 47–67. doi: 10.1080/15295192.2014.880018
Ding, Q., Li, D., Zhou, Y., Dong, H., and Luo, J. (2017). Perceived parental monitoring and adolescent internet addiction: a moderated mediation model. Addict. Behav. 74, 48–54. doi: 10.1016/j.addbeh.2017.05.033
Farbiash, T., Berger, A., Atzaba-Poria, N., and Auerbach, J. G. (2014). Prediction of preschool aggression from DRD4 risk, parental ADHD symptoms, and home chaos. J. Abnorm. Child Psychol. 42, 489–499. doi: 10.1007/s10802-013-9791-3
Fredricks, J. A., Blumenfeld, P. C., and Paris, A. H. (2004). School engagement: potential of the concept, state of the evidence. Rev. Educ. Res. 74, 59–109. doi: 10.3102/00346543074001059
Lin, S., Yu, C., Chen, W., Tian, Y., and Zhang, W. (2018). Peer victimization and Li, X., Newman, J., Li, D. P., and Zhang, H. Y. (2016). Temperament and adolescent Muthén, L. K., and Muthén, B. O. (1998–2012).
Janssens, A., Van den Noortgate, W., Verschueren, K., Colpin, H., Claes, S., et al. (2017). Adolescent externalizing behavior, psychological control, and peer rejection: transactional links and dopaminergic moderation. Br. J. Dev. Psychol. 35, 420–438. doi: 10.1111/bjdp.12184
Li, X., Newman, J., Li, D. P., and Zhang, H. Y. (2016). Temperament and adolescent problematic internet use: the mediating role of deviant peer affiliation. Comput. Hum. Behav. 60, 342–350. doi: 10.1016/j.chb.2016.02.075
Lin, S., Yu, C., Chen, W., Tian, Y., and Zhang, W. (2018). Peer victimization and aggressive behavior among Chinese adolescents: deviant peer affiliation as a mediator and parental knowledge as a moderator. Front. Psychol. 9:1036. doi: 10.3389/fpsyg.2018.01036
Liu, S., Yu, C., Zhen, S., Zhang, W., Su, P., and Xu, Y. (2016). Influence of inter-parental conflict on adolescent delinquency via school connectedness: is impulsivity a vulnerability or plasticity factor? J. Adolesc. 52, 12–21. doi: 10.1016/j.adolescence.2016.07.001
Loke, A. Y., Mak, Y. W., and Wu, C. S. T. (2016). The association of peer pressure and peer affiliation with the health risks of secondary school students in Hong Kong. Public Health. 137, 113–123. doi: 10.1016/j.puhe.2016.02.024
Longobardi, C., Iotti, N. O., Jungert, T., and Settanni, M. (2018). Student-teacher relationships and bullying: the role of student social status. J. Adolesc. 63, 1–10. doi: 10.1016/j.adolescence.2017.12.001
Longobardi, C., Prino, L. E., Fabris, M. A., and Settanni, M. (2017). Violence in school: an investigation of physical, psychological, and sexual victimization reported by Italian adolescents. J. Sch. Violence 18, 49–61. doi: 10.1080/15388220.2017.1387128
Loukas, A., and Pasch, K. E. (2013). Does school connectedness buffer the impact of peer victimization on early adolescents' subsequent adjustment problems? J. Early Adolesc. 33, 245–266. doi: 10.1177/0272431613453117
Loukas, A., Roaslon, L. A., and Herrera, D. E. (2010). School connectedness buffers the effects of negative family relations and poor effortful control on early adolescent conduct problems. J. Res. Adolesc. 20, 13–22. doi: 10.1111/j.1532-7795.2009.00632.x
Marsh, H. W., Craven, R. G., Parker, P. D., Parada, R. H., Guo, J., Dicke, T., et al. (2016). Temporal ordering of effects of adolescent depression, relational aggression, and victimization over six waves: fully latent reciprocal effects models. Dev. Psychol. 52, 1994–2009. doi: 10.1037/dev0000241
Maxwell, J. P. (2008). Psychometric properties of a Chinese version of the Buss-Warren aggression questionnaire. Pers. Individ. Differ. 44, 943–953. doi: 10.1016/j.paid.2007.10.037
Millings, A., Buck, R., Montgomery, A., Spears, M., and Stallard, P. (2012). School connectedness, peer attachment, and self-esteem as predictors of adolescent depression. J. Adolesc. 35, 1061–1067. doi: 10.1016/j.adolescence.2012.02.015
Muthén, K. L., and Muthén, B. O. (1998–2012). Mplus User’s Guide, Los Angeles, CA: Muthén and Muthén.
Nelson, D. A., Yang, C., Coyne, S. M., Olsen, J. A., and Hart, C. H. (2013). Parental psychological control dimensions: connections with Russian preschoolers’ physical and relational aggression. J. Appl. Dev. Psychol. 34, 1–8. doi: 10.1016/j.appdev.2012.07.003
Oldfield, J., Stevenson, A., Ortiz, E., and Haley, B. (2018). Promoting or suppressing resilience to mental health outcomes in at risk young people: the role of parental and peer attachment and school connectedness. J. Adolesc. 64, 13–22. doi: 10.1016/j.adolescence.2018.01.002
Oudekerk, B. A., Allen, J. P., Hessel, E. T., and Molloy, L. E. (2015). The cascading development of autonomy and relatedness from adolescence to adulthood. Child Dev. 86, 472–485. doi: 10.1111/cdev.12313
Rudasill, K. M., Niehaus, K., Crockett, L. J., and Rakes, C. R. (2014). Changes in school connectedness and deviant peer affiliation among sixth-grade students from high-poverty neighborhoods. J. Early Adolesc. 34, 896–922. doi: 10.1177/0272431613511330
Rudolph, K. D., Lansford, J. E., Agoston, A. M., Sugimura, N., Schwartz, D., Dodge, K. A., et al. (2014). Peer victimization and social alienation: predicting deviant peer affiliation in middle school. Child Dev. 85, 124–139. doi: 10.1111/cdev.12112
Settanni, M., Marenco, D., Fabris, M. A., and Longobardi, C. (2018). The interplay between ADHD symptoms and time perspective in addictive social media use: a study on adolescent Facebook users. Child. Youth Serv. Rev. 89, 165–170. doi: 10.1016/j.childyouth.2018.04.031
Singh, N. N., Lancioni, G. E., Manikam, R., Winton, A. S. W., Singh, A. N. A., Singh, J., et al. (2011). A mindfulness-based strategy for self-management of aggressive behavior in adolescents with autism. Res. Autism Spectr. Disord. 5, 1153–1158. doi: 10.1016/j.rasd.2010.12.012
Symeou, M., and Georgiou, S. (2017). Externalizing and internalizing behaviours in adolescence, and the importance of parental behavioural and psychological control practices. J. Adolesc. 60, 104–113. doi: 10.1016/j.adolescence.2017.07.007
Takahashi, A., Quadros, I. M., de Almeida, R. M. M., and Miczek, K. A. (2011). Brain serotonin receptors and transporters: initiation vs. termination of escalated aggression. Psychopharmacology 213, 183–212. doi: 10.1007/s00213-010-0600-y
Tian, Y., Yu, C., Lin, S., Liu, J., Liu, Y., and Zhang, W. (2019). Sensation seeking, deviant peer affiliation, and Internet gaming addiction among Chinese adolescents: the moderating effect of parental knowledge. Front. Psychol. 9:2727. doi: 10.3389/fpsyg.2018.02727
Wang, M. T., Willett, J. B., and Eccles, J. S. (2011). The assessment of school engagement: examining dimensionality and measurement invariance by gender and race/ethnicity. J. Sch. Psychol. 49, 465–480. doi: 10.1016/j.jsp.2011.04.001
Wang, Z., Yu, C., Zhang, W., Chen, Y., Zhu, J., and Liu, Q. (2017). School climate and adolescent aggression: a moderated mediation model involving deviant peer affiliation and sensation seeking. Pers. Individ. Differ. 119, 301–306. doi: 10.1016/j.paid.2017.08.004
Williams, L. J., Cote, J. A., and Buckley, M. R. (1989). Lack of method variance in self-reported affect and perceptions at work: reality or artifact? J. Appl. Psychol. 74, 462–468. doi: 10.1037/0021-9010.74.3.462
Zhu, J., Yu, C., Bao, Z., Jiang, Y., Zhang, W., Chen, Y., et al. (2017). Deviant peer affiliation as an explanatory mechanism in the association between corporal punishment and physical aggression: a longitudinal study among Chinese adolescents. J. Abnorm. Child Psychol. 45, 1537–1551. doi: 10.1007/s10802-016-0259-0
Zhu, J., Yu, C., Zhang, W., Bao, Z., Jiang, Y., Chen, Y., et al. (2016). Peer victimization, deviant peer affiliation and impulsivity: predicting adolescent problem behaviors. Child Abuse Negl. 58, 39–50. doi: 10.1016/j.chiabu.2016.06.008
Zhu, J., Zhang, W., Yu, C., and Bao, Z. (2015). Early adolescent internet game addiction in context: how parents, school, and peers impact youth. Comput. Hum. Behav. 50, 159–168. doi: 10.1016/j.chb.2015.03.079

**Conflict of Interest Statement:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2019 Tian, Yu, Lin, Lu, Liu and Zhang. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.