Parental Control and Adolescents' Delinquency: The Mediating Role of Deviant Peer Affiliation

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ABSTRACT. Adolescent delinquency is a serious social problem around the world. Understanding the risk factors associated with adolescent delinquency is an essential precondition of any effective prevention and intervention. This study investigated the unique relationship between different forms of parental control (behavioral control and psychological control) and adolescent delinquency, as well as the mediating role of deviant peer affiliation in the relationship between parental control and adolescent delinquency. Participants were 703 adolescents (mean age = 14.30 years, SD = 1.08) from three middle schools in central China. The Parental Behavioral and Psychological Control Scale, Deviant Peer Affiliation Questionnaire, and Adolescent Delinquency Scale were completed anonymously. By controlling for a series of variables like gender, age, socioeconomic status, and non-focal forms of parental control, it was found that psychological control was positively associated with adolescent delinquency. Moreover, deviant peer affiliation mediated the relationship between psychological control and adolescent delinquency. In contrast, although the association of behavioral control with adolescent delinquency was not significant, behavioral control significantly and negatively predicted deviant peer affiliation, which in turn was associated with adolescent delinquency (i.e. distal mediation). These findings suggest that different forms of parental control have differential associations with adolescent delinquency. Moreover, deviant peer affiliation is an important mediation mechanism underlying these relations. The practical implications of these findings were discussed.

KEYWORDS: delinquency, deviant peer affiliation, behavioral control, psychological control, adolescents

1. Introduction

Delinquency in adolescence is a serious social problem worldwide. It refers to behaviors that deviate from or violate social laws and behavioral norms, with potentially negative outcomes[1]. In general, adolescent delinquency includes a variety of problematic behaviors like excessive drinking, fighting, running away from home, stealing, and cheating in the exams and so on [1]. Previous studies have shown that delinquency increases sharply within the age range of 12–14, and peaks between 17 and 19 years old [2-3]. Adolescent delinquency can pose serious consequences for the individuals as well as for the whole society. Specifically, adolescent delinquency is associated with other youth problems, including school dropout and gang activity, which, in turn, can result in negative adult outcomes, such as failing to transition into responsible, productive citizens and engaging in continued criminal activity [4-5]. It is worth noting that child and adolescent delinquency has long been considered an essential precondition of adult criminality [6]. Therefore, the identification of the contributing factors and mechanisms of adolescent delinquency is essential for the development of empirically-based prevention and intervention programs.

In recent years, more and more researchers increasingly focused on the role of parental control in the development of adolescent delinquency [7-8]. Parental control refers to the parenting methods used by parents to supervise and manage the behaviors and activities of their children [9]. Parental control is comprised of two related but distinct forms: behavioral control and psychological control. Behavioral control refers to the parenting behaviors that parents impose various rules, regulations, and constraints on their children, and actively acquire information about children's behaviors and whereabouts [10]. Thus, behavioral control emphasizes the control of children's daily life and behaviors by parents. By contrast, psychological control refers to control behaviors where parents invade their child's inner world and undermine their development of autonomy by perplexing them, such as guilt induction, love withdrawal, and power assertion [9]. A large number of studies have shown that parental behavioral control is a favorable factor that inhibits adolescent delinquency [10-13], whereas psychological control is a risk factor that exacerbates adolescent delinquency [9-10][14-15]. These

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findings indicate that the two forms of parental control impose significant influence on adolescent delinquency.

Nonetheless, previous studies have some limitations that cannot be ignored. Firstly, the majority of previous studies have not examined the *unique* associations of the two forms of parental control with adolescent delinquency [15-16]. It has been found by some scholars that two forms of parental control are actually closely associated [8][17-18]. Thus, the relation between the focal form of parental control (e.g., behavioral control) and adolescent delinquency might be confounded by the non-focal form of parental control (e.g., psychological control) if the latter one is not assessed and controlled through statistical analyses (spurious association). Most previous studies have focused only on behavioral control or psychological control without considering the joint contribution of these two forms of parental control [15-16], and therefore they are not able to reveal the unique associations of these two forms of parental control with adolescent delinquency.

Secondly, little is known about the mediation mechanism underlying the relation between parental control and adolescent delinquency. Currently, there are some studies that have examined the mediating role of variables such as adolescents' self-control, self-disclosure, excessive control experience, and parental knowledge [19-20]. However, these variables are often partial mediators, indicating that other variables are worth of considering. This study tests the intervening role of deviant peer affiliation underlying the relation between parental control and adolescent delinquency. On one hand, parental control plays an important role in adolescents' deviant peer affiliation. According to social control theory [21], parental control is an important means to realize social control. Parents can control the behaviors of adolescents by encouraging and constraining children' activities (e.g., dating). Specifically, parents' behavior control can significantly and negatively predict deviant peer affiliation [20][22], while psychological control can positively predict deviant peer affiliation to a great extent [20][22]. On the other hand, deviant peer affiliation is an important factor inducing and exacerbating adolescents' problematic behaviors. According to social learning theory [23], peers who associate with bad behaviors are more likely to provide adolescents with an opportunity to imitate, and increase the possibility of individuals' misbehavior. Besides, the empirical studies also endorse such viewpoint that deviant peer affiliation is the closest promoting factor for adolescents' delinquency among many social factors [24-25]. Therefore, the above theories and empirical studies suggest that parental control may have indirect effects on adolescents' delinquency through deviant peer affiliation.

Overall, this study attempts to integrate social control theory and social learning theory to provide a deeper understanding of the mechanisms underlying the relation between parental control and adolescent delinquency. Specifically, the purpose of the present study is twofold: (a) to reveal the unique effects of both parental behavioral control and psychological control on Chinese adolescents' delinquency with an improved operational definition of parental control [18]; (b) to examine whether parental behavioral control and psychological control would be indirectly associated with adolescent delinquency through deviant peer affiliation. Figure 1 illustrates the proposed research model.

It is important to note that we selected middle school students instead of high school students as research subjects because middle school is a period when the conflict between parental control and children's desire for autonomy is relatively salient and thus the role of parental control in adolescent development is more pronounced in these adolescents (in China, many high school students board at school and do not have many contacts with their parents every day). Additionally, we selected general-population sample instead of clinical sample (e.g., reform school students). Although the base rate of problem behavior in this sample is relatively low, the findings of present study have important implications for universal instead of selective prevention and intervention. As Straus pointed out, the two types of samples are both valuable depending on the purpose for which the collected information is used [26].

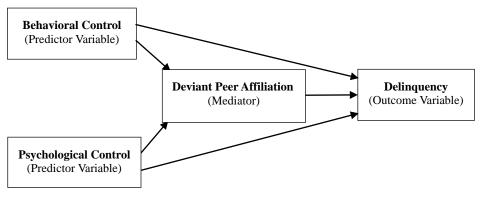


Figure. 1 The proposed mediation model

2. Methodology

2.1 Participants

We used random cluster sampling to select participants from three regular middle schools (i.e., two classes were drawn randomly from each grade of each school) in Hubei Province, China. A total of 703 adolescents participated in this study. There were 352 boys and 351 girls. The average age was 14.30 years (SD = 1.08). An examination of parental education level showed that 19% of the fathers and 27% of the mothers completed elementary education, 57% of the fathers and 58% of the mothers completed junior high school, 20% of the fathers and 13% of the mothers completed high school, and 4% of the fathers and 2% of the mothers received higher education. In terms of parents' employment, 84% of the fathers and 69% of the mothers had a stable job. These statistics are consistent with those of the local and national populations according to the 2010 Chinese census data [27].

2.2 Measures

Parental control. Parental behavioral control and psychological control were measured by the Parental Control Scale developed by Wang et al. [18] and slightly modified by Li and her colleagues [8][17]. The behavioral control subscale consisted of eight items assessing parental solicitation (e.g., "How often do your parents ask you about your activities outside school?") and five items assessing parental restriction (e.g., "How often do your parents require you to ask for their permission before you go out after school?"). Participants rated each item on a 5-point scale ranging from 1 (never) to 5 (always), with higher scores representing higher levels of behavioral control.

The psychological control subscale consisted of eight items assessing guilt induction (e.g., "My parents tell me that I should feel ashamed when I do not behave as they wish"), five items assessing love withdrawal (e.g., "My parents are less friendly with me if I do not see things their way") and three items assessing authority assertion (e.g., "My parents tell me that what they want me to do is the best for me and I should not question it"). Participants rated each item on a 5-point scale ranging from 1 (does not correctly describe my parents at all) to 5 (describes my parents exactly), with higher scores representing higher levels of psychological control. This measure has demonstrated good reliability and validity in Chinese adolescents [22][28]. For the current study, both scales demonstrated good reliability ($\alpha s = 0.85$).

Deviant peer affiliation. Deviant peer affiliation was measured by the Deviant Peer Affiliation Questionnaire [29]. This questionnaire consisted of eight items. The deviant behaviors of peers included smoking, alcohol use, cheating on school tests, stealing or shoplifting, misbehaving, internet addiction, skipping or cutting school, and physical and verbal aggression. Adolescents had to figure out how many of their friends had been engaged in each of the eight deviant behaviors during the prior year (e.g., "How many of your friends got drunk in the last year?") on a 5-point scale ranging from 1 (*none*) to 5 (*almost all*). The responses were averaged across the eight items, with higher scores representing greater deviant peer affiliation. This measure has demonstrated good reliability and validity in Chinese adolescents [30]. For the current study, the measure demonstrated good reliability ($\alpha = 0.83$).

Delinquency. Adolescent delinquency was measured by Delinquency Scale [1][25]. The measure of delinquency was based on the respondent's self-reports of the frequency of eight delinquent acts during the past six months. Items included various deviant behaviors, such as alcohol use, robbing, extorting or threatening someone, and so on. Similar items have been used in the National Children's Study of China [1]. Participants indicated how often they engaged in each activity during the last three months on a 5-point scale ranging from 1 (never) to 5 (5 times or more). The responses were averaged across the eight items, with higher scores representing greater delinquency. The measure of delinquency used in the present study has demonstrated good criterion-related validity in earlier research [25][31].

Control variables. Given that previous research has shown that adolescents' gender, age, and family socioeconomic status are associated with delinquent behaviors [6][14], we included them as control variables in statistical analyses. Adolescent gender was dummy coded such that 0 = girls and 1 = boys. Family socioeconomic status is a single factor derived from principal component analysis of multiple indicators (i.e., parental education, parental occupation status, and family financial status), with higher scores representing higher socioeconomic status.

2.3 Procedure

The study was approved by the ethics review board of the corresponding author's institution. The survey was conducted in classrooms. Trained data collectors administered the questionnaires using scripts and a manual of procedures so as to standardize the data collection process. Adolescents were informed that participation was voluntary and confidential. Meanwhile, the brief introduction on the questionnaires emphasized privacy and clearly pointed out that their answers would not be leaked to others. Additionally, adolescents were informed that they were free to quit participation in the study at any time.

2.4 Data analysis

SPSS 21.0 was used to analyze the data. Firstly, we checked for the potential common method bias for the use of self report questionnaires. Secondly, descriptive and correlation analyses were presented for all the variables to be studied. Thirdly, regression analyses were used to test the direct associations between the two forms of parental control and adolescent delinquency, as well as the mediating role of deviant peer affiliation. Specifically, to reveal the direct relationship between the two forms of parental control and adolescent delinquency, we used regression to obtain a partial regression coefficient that represented the unique effect of the focal form of parental control after controlling for the non-focal form of parental control [32].

Given that some of the variables (e.g., deviant peer affiliation and delinquency) were not normally distributed, and Shapiro-Wilk (SW) test [33] indicated that the distributions of deviant peer affiliation (SW test z=0.83, p<0.001), delinquency (SW test z=0.53, p<0.001). Thus, the bootstrapping method was used to test the significance of all the effects so as to obtain robust standard errors for parameter estimation [34]. The bootstrapping method produces 95% bias-corrected confidence intervals of these effects from 1000 resamples of the data. Confidence intervals that do not contain zero indicate the effects are significant. In all analyses, we controlled for adolescents' gender, age, and family socioeconomic status.

3. Results

3.1 Preliminary analyses

The measurement of all the variables are based on self-report, and the obtained results might be influenced by common method variance. To evaluate the degree to which this might cause a problem, Harman's single factor test was used to check for common method variance after data collection [35]. All scale items were adopted for principal component analysis. Results indicated that the amount of variance in the first principal factor was only 11.48% (less than the critical standard of 40%). Therefore, the possibility of common method bias affecting this study was not significant.

Table 1 contains descriptive statistics and bivariate correlations for all variables. The results show that the correlation between behavioral control and delinquency was not significant (r = -0.07, p > 0.05). However, psychological control was positively associated with delinquency (r = 0.15, p < 0.001), indicating that more psychological control was associated with higher level of delinquency. In addition, behavioral control was negatively associated with deviant peer affiliation (r = -0.14, p < 0.001), whereas psychological control was positively associated with deviant peer affiliation (r = 0.16, p < 0.001). These findings suggest that both low behavioral control and high psychological control are potential risk factors for deviant peer affiliation. Finally, deviant peer affiliation was positively associated with delinquency (r = 0.44, p < 0.001), indicating that higher deviant peer affiliation was associated with higher level of delinquency.

Variables 1. Gender 2. Age 0.08° 3. SES -0.08^{*} 0.05 4. Behavioral control 0.20** -0.10° -0.12^* 5. Psychological 0.02 -0.03-0.04 0.16^{**} control 6. Deviant peer 0.16^{**} 0.16*** -0.15*** -0.14*** 0.26*** affiliation 0.15*** 0.44*** 0.12** 0.07^{\dagger} -0.10^{*} -0.07^{\dagger} 7. Delinquency 1.09 Μ 0.00 3.18 2.67 1.43

Table 1 Univariate and bivariate statistics for all study variables

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CD	0.50	1.00	1.00	0.74	0.70	0.40	0.20
3D	0.50	1.08	1.00	0.74	0.70	0.49	0.20

Note: N = 703. Variables 1–3 are control variables. Gender was dummy coded such that 1 = boys and 0 = girls. SES = socioeconomic status, which is a factor score of parental education, occupation, and family economic status, with higher scores representing higher levels of family socioeconomic status.

† p < 0.10. *p < 0.05. **p < 0.01. ***p < 0.001.

3.2 Tests of the direct and indirect effects of parental control

Table 2 shows that after controlling for such covariates as gender, age, and socioeconomic status, the predictive effect of behavioral control on adolescent delinquency was not significant, whereas psychological control had a significant positive predictive effect on adolescent delinquency.

Table 2 Testing the direct and indirect association between parental control and adolescent delinquency

	Equation1			Equation 2			Equation 3		
Predictors	(Delinquency)			(Deviant peer affiliation)			(Delinquency)		
	В	SE B	β	В	SE B	β	В	SE B	β
Gender	0.02	0.02	0.06	0.14	0.04	0.14***	0.00	0.01	0.00
Age	0.02	0.01	0.11^{**}	0.06	0.02	0.14^{***}	0.01	0.01	0.05
SES	-0.01	0.01	-0.07	-0.05	0.02	-0.11	-0.01	0.01	-0.03
Behavioral control (BC)	-0.01	0.01	-0.06	-0.07	0.02	-0.13^{***}	-0.00	0.01	-0.01
Psychological control (PC)	0.03	0.01	0.16^{***}	0.13	0.02	0.27^{***}	0.01	0.01	0.05
Deviant peer affiliation							0.08	0.01	0.41^{***}
R^2	0.05		0.15			0.19			
F	5.49***		18.26***				21.31***		

Note: Each column is a regression model that predicts the criterion at the top of the column. Gender was dummy coded such that 0 = girls and 1 = boys. SES = socioeconomic status.

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

Specifically, Equation 1 tested the predictive effects of the predictor variables on the outcome variable. The analysis showed that the total regression equation was significant, F(7, 695) = 5.49, p < 0.001. The joint explanatory power (R^2) of all the predictive variables for delinquency was 0.05.

Equation 2 tested the predictive effects of the predictor variables on the mediating variable. The analysis showed that the total regression equation was significant, F(7, 695) = 18.26, p < 0.001. The joint explanatory power (R^2) of all the predictive variables for delinquency was 0.15. As shown in Table 2, after controlling for such covariates as gender, age, and socioeconomic status, behavioral control had a significant negative predictive effect on deviant peer affiliation, whereas psychological control had a significant positive predictive effect on deviant peer affiliation.

Equation 3 tested the predictive effects of predictor variables and the mediating variable on the outcome variable. The analysis showed that the total regression equation was significant, F(8, 694) = 21.31, p < 0.001. The joint explanatory power (R^2) of all the predictive variables for delinquency was 0.19. As shown in Table 2, after controlling for such covariates as gender, age, and socioeconomic status, deviant peer affiliation had a significant positive predictive effect on adolescent delinquency. In addition, the residual direct effects of behavioral control and psychological control on adolescent delinquency were non-significant.

The nonparametric percentile bootstrapping method with bias correction was used to test the mediating effect and it was shown that deviant peer affiliation had a mediating effect between behavioral control [36], psychological control, and adolescent delinquency. It should be noted that although the traditional method for testing mediating effects requires significant correlations between the predictor variable and the outcome variable [37], the latest recommendation does not have this requirement. If the correlation between the predictor variable and the outcome variable are not significant but they are significantly associated in theory, the mediating analysis could still be performed [38]. The total effect of behavioral control on adolescent delinquency was not significant in this study, but the relationship between behavioral control and deviant peer affiliation (which conforms to "social control theory") as well as the relationship between deviant peer affiliation and adolescent delinquency (which conforms to "social learning theory") were both of theoretical significance, thus we still analyzed this mediating process.

3.3 Supplementary analysis

Finally, we conducted moderator analysis to examine potential gender difference in the whole mediation model. The analysis of moderated mediation model was performed using Hayes's (2013) PROCESS macro (Model 59) [36]. The bias-corrected percentile bootstrap method further indicated that the indirect effect of deviant peer affiliation between parental behavioral control and adolescent delinquency was not moderated by gender (index = 0.01, SE = 0.01, 95% CI = [-0.01, 0.03]). In addition, the indirect effect of deviant peer affiliation between parental psychological control and adolescent delinquency was not moderated by gender (index = -0.01, SE = 0.01, 95% CI = [-0.03, 0.02]). In conclusion, the gender effect was not significant on the mediation process constructed previously.

4. Discussion

The current study examined how social control theory and social learning theory come together to explain delinquency. The findings revealed that parental control and deviant peer affiliation could come together to explain delinquency. The results suggested that psychological control was positively associated with adolescent delinquency. Moreover, deviant peer affiliation mediated the relationship between psychological control and adolescent delinquency. In contrast, although the association of behavioral control with adolescent delinquency was not significant, behavioral control significantly and negatively predicted deviant peer affiliation, which in turn was associated with adolescent delinquency (i.e., distal mediation). Accordingly, deviant peer affiliation linked the indirect association between two form of parental control and delinquency. That is, the findings revealed that deviant peer affiliation partially mediated the effect that parental control had on delinquency.

4.1 The direct role of parental control on delinquency

This study found that different forms of parental control had different direct effects on adolescent delinquency. Specifically, parental psychological control can have a significant negative prediction on adolescent delinquency, while parental behavior control has no significant positive effect on adolescent delinquency. It is noteworthy that previous studies in Western background have found that compared to parental psychological control, parental behavior control can more significantly predict children's externalizing behaviors (such as delinquency) [13]. However, this study found that the adverse effect of parental psychological control on adolescent delinquency were more pronounced than the weak positive effect of parental behavior control in the context of Chinese culture. There are two possible reasons as follows. In the first place, parental psychological control deprives adolescents of independent thinking, rights of expressing emotions and inner thoughts under the background of Chinese culture [29]. It also hinders the fulfillment of the basic psychological needs of adolescents [39], which is not conducive to the establishment of good parent-child relationship, and thus induces adolescent delinquency. In the second place, although behavioral controls that traditionally contain parental knowledge often have a significant effect, the prediction effects of behavioral control on adolescent delinquency are generally smaller or less significant in the exclusion of effects of parental knowledge [40].

The finding of this study provides a meaningful answer to whether behavior control and psychological control have unique effects on adolescent delinquency. After controlling the overlapping parts of the two kinds of parental control, the unique effect of behavior control is not significant, whereas the psychological control has a robust and unique effect. The results show that although both behavior control and psychological control belong to the parental control and there is a significant positive correlation, the two have different effects on adolescent delinquency. The results suggest that we should be cautious about the beneficial role of behavioral control and pay more attention to the adverse effects of psychological control on delinquency. It is important to note that although the unique effect of psychological control is only a small effect, it is very close to the meta-analysis evidence in the field of parenting style (including parental control) in recent years [41], and at the same time, small effect may still have important theoretical and practical significance [17].

4.2 Mediating effect of deviant peer affiliation

In this study, we found that behavioral control was a significant negative predictor of deviant peer affiliation and reduced adolescent delinquency, whereas psychological control was a significant positive predictor of deviant peer affiliation and increased adolescent delinquency. On one hand, according to social control theory, parents will be more aware of their children's daily activities if they make appropriate rules and actively inquire and supervise the daily whereabouts of their kids, thereby reducing the chance of adolescents affiliating with

deviant peers. By contrast, self-determination theory [42] and psychological reactance theory [43] hold the opinions that satisfying the basic psychological needs (such as the need for autonomy) of children could be hampered in this case. Thus, strong negative emotional experiences such as rebellion and protest could be provoked, and the internalization of their parents' behavioral norms by children could be impeded, thereby further intensifying deviant peer affiliation to satisfy the basic psychological needs of children or to demonstrate independence when their parents adopt psychological control, such as creating guilt, withdrawal of love, and monopoly of power. On the other hand, according to social learning theory, adolescents tend to conduct illegal and undisciplined behaviors when they are under the influence of their deviant peers, such as peer pressure, behavior demonstration, antagonistic behaviors, behavior reinforcement, and creating opportunities [44]. In particular, it should be noted that although the specific effect of behavioral control on adolescent delinquency was not significant, it can prevent delinquency by reducing deviant peer affiliation. It may also be helpful for reducing adolescent delinquency if a distal mediating process can be applied that intervenes with behavioral control. Therefore, effective behavioral control is still an important parenting skill.

To sum up, the mediating effect identified in this study highlights that the ecology of the subsystems (such as family and peers) that affect adolescent delinquency is interconnected, rather than being independent. One kind of ecological risk factor can increase the possibility of adolescents exposing to another kind of ecological risk, thus increasing the possibility that adolescents are affected by multiple risk factors. Thus, we should strengthen the intervention from such aspect and focus on the influence of family environment (such as parental control) when developing prevention and intervention program though peers. Peer factor is not independent from family factors, and inappropriate parental control (low behavioral control and high psychological control) will increase the risk of adolescents' deviant peer affiliation, thus indirectly influencing their delinquency.

4.3 Limitations and future directions

Several limitations must be considered when interpreting the findings of the present study and designing future studies. Firstly, this research assumed that parental control had influence on adolescent delinquency based on socialization theory, but causality cannot be inferred from cross-sectional designs. For example, there may be reverse causation between parental control and deviant peer affiliation, and between deviant peer affiliation and delinquency. Cross-lagged panel design or intervention studies should be used in the future to elucidate the directions of the relationships among different variables.

Secondly, a potential limitation is that the measurement of the variables of this research was reported by adolescents. Although self-report is suitable for the measurement of intrinsic experience variables such as psychological control and self-report data of delinquency appear acceptably valid and reliable for most research purposes [45-46], there is still much room for the improvement of data collection methods, such as random response techniques and audio assisted computer-based interviewing, which have the potential to increase the accuracy of responses of delinquency [46]. It is also warranted to further investigate the consistency and difference of different reporters with the combination of parents' report, so as to explore the influence of parental control on adolescents' delinquency from many different perspectives.

Thirdly, the model was tested in a group of Chinese adolescents. More efforts are needed to confirm the associations between the variables in the theoretical model exemplified in this study in adolescents from other cultures. Finally, this paper explores the internal mechanism of adolescents' delinquency only from family factors (parental control) and peer factors (deviant peer affiliation). According to "person-context interaction theory" [47], adolescents' delinquency is the common result of individuals and environmental factors. Therefore, individual factors can be added in future research to examine the interaction of various factors, and have a deeper understanding of the formation mechanism of adolescent delinquency.

5. Conclusions

To sum up, the present study distinguished the effects of behavioral and psychological control on delinquency. Our findings suggest that parental control has both direct and indirect relationships with delinquency. Firstly, adolescents were less likely to be engaged in delinquency if they perceived their parents expressing concern in the form of behavioral control. In contrast, delinquency was prone to be observed in adolescents who perceived their parents exerting psychological control in a compulsive way. Moreover, adolescents with high deviant peer affiliation had more possibilities of delinquency, and deviant peer affiliation to some extent served as a link in the chain between parental control and adolescent delinquency. Taken together, these findings suggest that adaptive parenting behavior (e.g. high behavioral parental and low psychological control) may help in moulding adolescents' capacities to inhibit delinquency and better adjust them to social norms for positive development.

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