


Parental Psychological Control and College Students' Negative Risk-Taking Behaviors: The Chain-Mediating of Autonomy and Self-Control

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Purpose: To deeply explore the relationship between parental psychological control and negative risk-taking behaviors among Chinese college students and the mediating role of autonomy and self-control, providing a reference basis for preventing and intervening in college students' negative risk-taking behaviors.

Patients and Methods: Questionnaires was administered to 1173 college students ($M_{age}=20.7 \pm 1.32$) in Hunan Province using four scales. Subsequently, we processed and analyzed the collected data using SPSS 26.0 software.

Results: Parental psychological control demonstrated a significantly positive correlation with college students' negative risk-taking behaviors. The impact of parental psychological control on college students' negative risk-taking behaviors was mediated by self-control and the combined effect of autonomy and self-control.

Conclusion: Among Chinese college students, autonomy and self-control act as a sequential mediating factor between negative risk-taking behaviors and parental psychological control. This study uncovered the underlying process by which parenting practices affected college students' negative risk-taking behaviors. It offers empirical support for successful treatments aimed at reducing future risk-taking behaviors among college students, as well as some evidence in favor of the crucial part that parenting styles play in the development of positive adolescents.

Keywords: college students, parental psychological control, negative risk-taking behaviors, autonomy, self-control

Introduction

Adolescence is a critical period in the development of self-awareness and independence, marking the shift from childhood to adulthood. Adolescents at this stage are easily influenced by factors such as physiology, personality, peers, and the environment, and implement a variety of negative risk-taking behaviors. When faced with avoidance conflicts, people who take risks to meet their demands or interests even if they are aware of the possible hazards or unfavorable outcomes are said to be engaging in risk-taking behavior.¹ Depending on the differences in the nature of the risk-taking activities that individuals engage in, they can be categorized into two groups: positive and negative risk-taking behaviors. The former means socially acceptable and developmentally beneficial behaviors, while the latter means behaviors that are harmful to one's physical and mental well-being, negatively impact one's development, and are generally antisocial. Examples of these behaviors include drinking, fighting, skipping class, cheating on exams, and engaging in risky situations. These behaviors are also known as dangerous or maladaptive risk-taking behaviors.^{2,3} Studies focusing on the age characteristics of risk-taking behaviors have found that negative risk-taking behaviors occur most frequently in adolescence compared to late adulthood,⁴ and that negative risk-taking behaviors are significantly higher in late adolescence (18–20) than in mid-adolescence and early adolescence.⁵ College students are in a crucial transitional stage between late youth and adulthood, and are physiologically and environmentally more capable of risk-taking behaviors. In addition, college students are gradually removed from the close supervision of their families and are

subject to less adult supervision, so they have more opportunities to be exposed to risky behaviors and show more risky behaviors in real life, and the negative results caused by their behaviors are more serious. What's more, the increased autonomy and freedom of the university environment may lead college students to seek excitement and novelty in the absence of supervision. Secondly the pressure of competition and the expansion of social circles may expose college students to more temptation and pressure to seek negative risk-taking behaviors as a way to escape reality. Negative risk-taking behaviors of college students have become one of the focuses of widespread social concern, so this paper aims to conduct an in-depth study on this group.⁶⁻⁸

Risk-taking activities can have detrimental long-term effects, such as poor social functioning, diminished health, injury to oneself and others, drug addiction, legal issues, and even death.⁹⁻¹¹ The family is one of the most significant microsystems impacting an individual's development according to the ecological systems theory (EST),¹² and parental psychological control is a significant family environmental component that is directly linked to the behavioral development of teenagers.¹³⁻¹⁶ There have been more studies focusing the connection between family characteristics and negative risk-taking behaviors in the early and middle stages of adolescence. Established research has concentrated on this relationship. For example, numerous researches have discovered strong positive associations between parental psychological control and negative risk-taking behaviors in 15-year-old teenagers, like drug usage and cyberbullying.¹⁷⁻²⁰ There are two main areas of attention in the current investigation of the connection between teenage risk-taking behaviors and parental psychological control. One is the linear relationship between the two, including significant positive correlation and negative correlation. The other is the study of their nonlinear relationship, encompassing U-shaped curve, inverted U-shaped curve, and critical point correlation.²¹⁻²⁴ The conclusions on the relationship between the two exhibit diversity and complexity, which may be influenced by factors such as cultural background, age distribution of the adolescent subjects, types of risk-taking behaviors, or their severity. Besides, early and late adolescence as well as early adulthood are times when risk-taking behavior is common.²⁵ College students are more physically separated from their parents than middle school kids are, and they also exhibit better degrees of independence and self-control. Therefore, this study aims to determine how negative risk-taking behaviors in a group of college students who are starting to live independently of their families relate to parental psychological control and what role autonomy and self-control play in that relationship, so as to provide useful educational significance and constructive countermeasures for the reduction of negative risk-taking behaviors of college students and the promotion of their mental and physical health.

Parental Psychological Control and Negative Risk-Taking Behaviors

Parental psychological control is a passive parenting approach where parents use authority, guilt-instillation, and withholding love in an effort to control their children's emotions, thoughts, behaviors, and parent-child relationships.²⁶ Reactance theory suggests that regulations and laws that limit the freedom of teenagers make it more likely for them to participate in prohibited activities, such as parental dogmatic language that elicits resistance from adolescents, the most obvious consequence of which is the boomerang effect, whereby the individual is inclined to do the opposite of what is asked of him or her.^{27,28} Research has shown that the tendency to resist peaks during adolescence,²⁹ and that those who have a strong inclination to resist are more perceptive to dangers to their liberty.³⁰ Research suggests that teenagers who experience parental psychological control are more inclined to develop stronger resistance, which further triggers risk-taking behaviors such as cyberbullying become more resistant, which in turn encourages risk-taking behaviors like cyberbullying.³¹ In addition, researchers found that psychological control was shown to be a risk factor for middle school students' choice to use drugs.¹⁴ Another researcher's study also concluded that parental psychological control positively predicted individuals' abuse of alcohol and tobacco and risky behaviors.^{32,33} Additional studies have validated the positive correlation between parental psychological control and negative risk-taking behaviors, such as infractions and externalizing problem behaviors (eg, violations, aggression, and delinquency), which are indicators of negative risk-taking behaviors.^{17,34} Parental psychological control limits the freedom of college students and poses a threat to their need for autonomy, leading to more resistant experiences.³⁵ In order to satisfy their needs, college students may resort to risky behaviors.^{36,37}

The Mediating Role of Autonomy

College students' ability to adapt socially is greatly impacted by their ability to develop their autonomy. Taiwanese scholar Yeh Kwong-hui proposed dual autonomy based on the cultural self-concept, individuating autonomy, which emphasizes self-independence and expresses individualized traits, and relating autonomy, which reflects self-approved dependence.³⁸ Chinese adolescents show more generalized dependence on their parents and lower development of independence compared to Western societies.³⁹ Self-determination theory states that psychological control encompasses both the external pressures placed on children by their parents to impose their will on them and the internal pressures placed on them by their parents to comply in order to avoid parental disapproval and loss of care.⁴⁰ These dual pressures of parental psychological control impede the fulfillment of college students' basic psychological needs and autonomy needs, which can limit their autonomy to develop as adults.⁴¹ Studies have shown that a close family environment and positive parenting styles promote individual autonomy.⁴² Berndt also argued that the development of college students' autonomy is closely linked to their family environment.⁴³ This demonstrates that the growth of college students' autonomy may be hampered by parental psychological control. The psychodynamic perspective defines autonomy as emotional detachment from parents, and it is believed that this emotional distance is essential to adolescent development in a healthy way.⁴⁴ Furthermore, the primary focus of the late-adolescent parent-child interaction is separation-individualization, which is the process by which teenagers seek self-identity, autonomy, and independence based on developing strong emotional bonds with their parents.⁴⁵ College students are in the period of "separation-individuation" when they desire to keep a distance from their parents to achieve self-independence. Adolescents who experience excessive parental psychological control may not be able to attain separation-individuation, which could impede their ability to grow and establish autonomy.⁴⁶ Previous studies revealed that the more autonomous college students are, the less frequently they drink alcohol.⁴⁷ Furthermore, studies on risk-taking behavior in adults have demonstrated that a person takes fewer risks the more independent they are.⁴⁸ Therefore, autonomy would mediate the correlation between parental psychological control and negative risk-taking among college students.

The Mediating Role of Self-Control

Self-control is a crucial component in the process of personal growth and is a major individual factor determining the risk-taking behaviors of adolescents.⁴⁹ The process by which people deliberately resist urges, routines, or instinctive reactions and modify their behavior to accomplish long-term objectives is referred to as self-control.^{50,51} There are many factors that influence self-control, including familial impacts like parental supervision and family dynamics.⁵² Numerous studies have shown that poor parent-child connections and bad parenting styles (eg, coercive parenting, negative control) are linked to lower levels of self-regulation in young and middle childhood.^{53,54} Compared to parents in Western cultures, parents in Chinese cultures are more inclined to exercise psychological control over their children.⁵⁵ Parents frequently employ psychological control techniques like guilt-inducing behaviors to impact their children's ability to exercise self-control.^{56,57} Previous empirical studies have demonstrated that teenagers who lack self-control are more inclined to get involved in risky behaviors,⁵⁸ such as smoking, alcohol abuse,⁵⁹ antisocial behavior,⁶⁰ substance abuse,⁶¹ and sexual offending,⁶² etc. Research by Pung has also demonstrated that self-control significantly negatively predicts negative risk-taking behaviors.⁶³ Furthermore, college students who experience psychological control from their parents suffer from a lack of self-control resources, which causes them to externalize their problem behaviors.⁶⁴ Therefore, self-control would mediate the correlation between parental psychological control and negative risk-taking among college students.

The Chain Mediating Role of Autonomy and Self-Control

As mentioned above, autonomy emphasizes an individual's reduced independence from parental or significant other dependence, and self-control emphasizes self-management and adjustment of one's behavior. Self-determination theory states that individuals are on a continuum of motivation,⁶⁵ with intrinsic motivation an individual engages in a behavior out of personal interest or willingness to do so, while extrinsic motivation means acting for reasons related to the outside world. Importantly, an individual's intrinsic motivation can be diminished under more controlling environments, and their motivation can be altered due to rewards or penalties. When a person's core psychological requirements for competence,

relationships, and autonomy are satisfied in the social context, motivation for autonomy should increase. Additionally, circumstances that promote autonomy tend to increase intrinsic motivation. The degree to which a self-control activity may be draining should be determined in part by an individual's sense of autonomy.⁶⁶ Similar results have been obtained by experimental research that directly modifies sentiments of autonomy: Vitality-related feelings improve one's ability to exercise self-control. Better self-control performance can be attained by replenishing lost self-control power with the help of this increased vitality linked to autonomy support.⁶⁷ In a similar vein, Moller et al's experimental study discovered that choosing decisions that feel autonomous results in less depletion and higher self-control performance than choosing decisions that feel forced.⁶⁸ College students' sense of autonomy determines how much of their self-control activities they can afford to give up, and in the pressurized environment of parental psychological control, college students' autonomy decreases and their self-control resources are more depleted, which in turn makes self-control performance then also poorer, ultimately increasing the frequency of college students' negative risk-taking behaviors. Therefore, autonomy and self-control would mediate sequentially the correlation between parental psychological control and college students' negative risk-taking behaviors.

Consequently, this study explores the ways in which parental psychological control influences college students' negative risk-taking behaviors and looks into the potential mediating roles of autonomy and self-control. This research will contribute to the deeper exploration of linked fields of study, and also have some practical implications for family parenting. We developed a theoretical model (shown in Figure 1) based on earlier research and proposed the following hypotheses:

H1. Parental psychological control would positively predict negative risk-taking behaviors among college students.

H2. Autonomy would mediate the correlation between parental psychological control and negative risk-taking among college students.

H3. Self-control would mediate the correlation between parental psychological control and negative risk-taking behaviors of college students.

H4. Autonomy and self-control would mediate sequentially the correlation between parental psychological control and negative risk-taking behaviors of college students.

Methods

Participants

Our study lasted for five months, from September 11, 2023 to February 10, 2024. The research process included pre-preparation phases, such as literature review, tool preparation and initial justification, as well as subsequent sampling, data analysis and paper writing. A total of 1300 questionnaires were distributed to five universities in Hunan Province using convenience sampling method by means of electronic questionnaires using QuestionStar software. In the sampling phase, we first sent out recruitment notices to these universities. Then, for the next five days, we scheduled a specific focused online assessment time for each school student each day. All assessments were conducted in a quiet environment

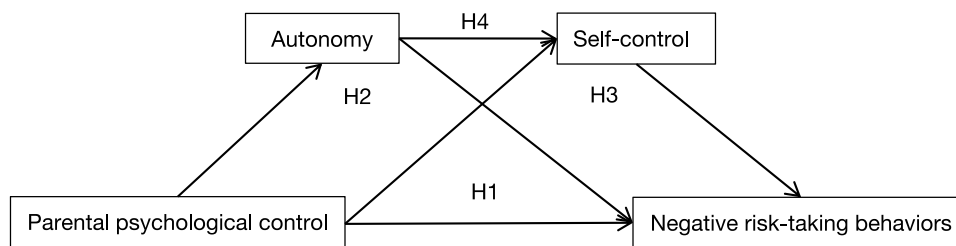


Figure 1 Hypothesized conceptual.

to ensure the quality of the data. In the end, we exported all the data through the backend of the Questionnaire Star software, laying the foundation for subsequent analysis.

After eliminating invalid questionnaires with too short response time (50) (less than 3 minutes, we calculated that the average time for college students to complete the questionnaire was 3 minutes through a pre-experiment), regular responses (23) (Regular responses take the form of non-randomized responses, such as answering in a straight line or choosing answers according to a meaningless pattern) and no serious responses (54) (Inattentive responses were in the form of randomized responses, eg, filling in extreme value scores), 1173 questionnaires were gathered and organized, with a validity rate of 90%. We would like to state that based on Monte Carlo simulations, we calculated the sample size of the relevant models and inverted the current effect sizes of the chain mediation model, the minimum sample size of the chained mediation model between autonomy and self-control (taking a power value of 0.8) was $N=186$, (taking a power value of 1.0) was $N=449$, the current dataset subject size is much higher than the predicted sample size, and the current effect values of the backward model are all 1.⁶⁹ The subjects ranged in age from 17 to 24 years old, with an average age of 20.46 years ($SD=0.85$). Of them, 693 (59.1%) were male and 480 (40.9%) were female; 681 (58.1%) lived in cities and 492 (41.9%) lived in village; and 531 (45.3%) were freshmen, 334 (28.5%) were sophomores, 284 (24.2%) were juniors, and 24 (2%) were seniors, 324 (27.6%) were only child and 849 (72.4%) were not.

The research was reviewed by the Research Ethics Committee of the Psychology Department of the author's university. Participation in the online questionnaire was done after obtaining informed consent from the teachers and students in 5 universities.

Measures

Parental Psychological Control

The Psychological Control Scale of the Parental Control Scale developed by Wang et al was used to measure the degree of parental psychological control perceived by college students.³⁹ The scale was divided into three dimensions with 18 questions. Adoption of the 5-point scale, from 1 to 5 as completely inconsistent, relatively inconsistent, somewhat consistent, relatively consistent, and completely consistent. Higher final scores represent a higher degree of parental psychological control. In our study, the Cronbach's alpha coefficient for this scale was 0.96. The fit indices of the validated factor analysis were: $X^2/df=4.11$, $CFI=0.98$, $TLI=0.96$, $RMSEA=0.07$, and $SRMR=0.06$.

Autonomy

The Individualized Autonomy subscale of the Adolescent Autonomy Scale developed by Kwang-hui Yeh was used to measure the autonomy of college students.³² It consists of 6 questions and is scored on a 6-point scale, with 1 being "not at all" and 6 means "completely". Higher total scores indicate greater autonomy. The scale has found many applications in Chinese adolescent populations.^{32,70,71} And the Cronbach's α coefficient for autonomy subscale was 0.91. The fit indices of the validated factor analysis were: $X^2/df=3.35$, $CFI=0.99$, $TLI=0.98$, $RMSEA=0.05$, and $SRMR=0.02$.

Self-Control

Assessment of self-control using the Chinese version of the Self-Control Scale (BSCS).⁷² The original scale was created by Morean et al. The adapted version of the scale consists of 7 items including the dimensions of Self-Discipline and Impulse Control. A 5-point scale was used with 1 indicating "not at all compliant" and "5" indicating "fully compliant". A higher score means that the individual has a higher level of self-control. The Cronbach's α coefficient for self-control subscale in our study was 0.62. We scrutinized the data to find extreme values and chose to replace the extreme values with the mean values of the variables (small sample:31)⁷³ and then analyzed the reliability of the Self-Control Scale again, which had a Cronbach's α coefficient of 0.85, and the Cronbach's α coefficient of the two dimensions of the scale, Self-Regulation and Impulse Control, which was 0.81 and 0.83 respectively. The fit indices of the validated factor analysis were: $X^2/df=3.07$, $CFI=0.95$, $TLI=0.97$, $RMSEA=0.04$, and $SRMR=0.03$.

Negative Risk-Taking Behavior

College students' negative risk-taking experiences were measured by the Negative Risk-Taking Behavior subscale of the shortened and modified version of the Positive risk taking subscale (PRTS). The original scale was constructed and validated by Duell and Steinberg, with good validity.³ The original scale was administered to American adolescents with an average age of 18 years and consisted of 14 items. Among them, the original item 22 was related to weapons, while 23 and 28 were both related to driving. Considering the cultural context of China, college students usually learn to drive after the age of 18 and are not allowed to carry guns. Therefore, during the revision process, we deleted these three items (ie, 22, 23, and 28) from the negative risk-taking subscale and retained the remaining 11 items. A 4-point scale (from "0 = never" to "3 = more than 5 times"), with higher scores indicating that the subject's negative risk-taking behavior is more frequent. And the Cronbach's α coefficient was 0.84. The fit indices of the validated factor analysis were: $X^2/df=4.63$, CFI=0.98, TLI=0.95, RMSEA=0.06, and SRMR=0.01.

Data Analysis

SPSS 26.0 was used for both data collection and analysis. First, standardization and descriptive statistics (mean and standard deviation) were applied to the independent factors (negative risk-taking behaviors), mediating variables (autonomy, self-control), and dependent variables (parental psychological control). Second, the Pearson correlation was used to perform a bivariate study of the relationship between negative risk-taking behaviors and parental psychological control and intermediary variables. Third, the mediating function of autonomy and self-control between parental psychological control and negative risk-taking behaviors was investigated using Model 6 in the SPSS macro software PROCESS. Lastly, the bias-corrected bootstrap approach was applied to test the mediation hypothesis on a sample of 5000. The model includes gender and family residence as controlled variables. Indirect effects were deemed statistically significant when there was no zero in the 95% confidence interval (CI). Additionally, Before data processing, single-factor confirmatory factor analysis was used to test for common method bias. Two dimensions of parental psychological control, six entries of autonomy, two dimensions of self-control, and two item packages of negative risk-taking behaviors were also used as new indicators, and single-factor confirmatory factor model was constructed using Mplus8.30. The results showed poor model fit ($X^2/df=11.93$, CFI=0.50, TLI=0.47, RMSEA=0.13, SRMR=0.14), indicating that there was no apparent common method bias in this study.⁷⁴

Results

Preliminary Analyses

In order to ensure the validity of the model, we performed a diagnostic analysis of multicollinearity for all predictor variables.⁷⁵ After testing, the tolerance (Tolerance) of all predictor variables is greater than 0.3, and the VIF value (Variance Inflation Factor) is less than 5. Therefore, there is no serious multicollinearity problem. The results are shown in Table 1.

The correlation matrix and the study variables' mean and standard deviation are displayed in Table 2. It is evident from the correlation matrix table that among college students, parental psychological control, autonomy, self-control, and negative risk-taking behaviors are significantly correlated ($p<0.01$).

Multiple Mediating Model Analysis

We used the model 6 in the SPSS plug-in PROCESS 3.5. Considering that variables such as gender and family socioeconomic status have been significantly associated with negative risk-taking behaviors in existing studies,⁴² and

Table 1 Collinearity Diagnosis

	Tolerance	VIF
Parental Psychological Control	0.95	1.05
Individuating Autonomy	0.84	1.20
Self-control	0.81	1.23

Abbreviation: Vif, variance inflation factor.

Table 2 Arithmetical Means, Standards of Deviation and the Correlation Values of the Factors

Variable	M	SD	1	2	3	4
1. Parental Psychological Control	45.51	16.84	1			
2. Individuating Autonomy	24.47	6.28	-0.12***	1		
3. Self-control	21.78	4.06	-0.21***	0.40***	1	
4. Negative Risk-taking Behaviors	13.84	4.30	0.23***	-0.06***	-0.24***	1

Note: *** $p < 0.001$.

Abbreviations: M, mean; SD, standard deviation.

that family residence is one of the most important indicators of response to economic status. Therefore, this study tested the mediating effects of individualized autonomy and self-control while controlling for gender and family residence.

Regression analysis results (Table 3) indicated that negative risk-taking behaviors were positively predicted by parental psychological control ($\beta = 0.20$, $t = 7.85$, $p < 0.001$), and when individualized autonomy and self-control were included in the regression equation, parental psychological control negatively predicted individualized autonomy and self-control ($\beta = -0.13$, $t = -4.39$, $p < 0.001$; $\beta = -0.18$, $t = -6.40$, $p < 0.001$); individualized autonomy positively predicted self-control ($\beta = 0.39$, $t = 13.95$, $p < 0.001$), but not negative risk-taking behaviors significant ($p = 0.10$); self-control negatively predicted negative risk-taking behavior ($\beta = -0.19$, $t = -7.31$, $p < 0.001$).

A substantial total effect was shown by the mediated effects analysis, which produced a total effect value of 0.21 with a 95% confidence interval not containing 0. These results are displayed in Table 4. Parental psychological control has a strong direct impact on risk-taking behavior; the direct effect value was 0.16, with a 95% confidence interval that did not contain 0. Parental psychological control and negative risk-taking behavior were found to be significantly mediated by individualized autonomy and self-control (total indirect impact value: 0.05, 95% confidence interval not including 0). The nonparametric percentage corrected for bias The sample was repeated 5000 times using the bootstrap test, and the results of the mediation effect test and the confidence interval estimation revealed that: the indirect effect 1, parental psychological control→individualized autonomy→negative risk-taking behaviors, the confidence interval contained 0, which indicated that the indirect effect of this pathway was not significant; the indirect effect 2, parental psychological control→self-control→negative risk-taking behaviors, this path was significant; Indirect Effect 3, Parental Psychological

Table 3 Regression Analysis of the Relationship Between Parental Psychological Control and Negative Risk-Taking Behaviors

Regression Equation		Fitting Index			Significance	
Result Variable	Predictor Variable	R	R ²	F	β	t
Negative risk-taking behaviors	Age	0.26	0.07	29.02***	-0.24	-4.65***
	Family residence				0.05	1.01
	Parental psychological control				0.20	7.85***
Individuating autonomy	Age	0.19	0.03	13.89***	-0.23	-3.94***
	Family residence				-0.15	-2.66**
	Parental psychological control				-0.13	-4.39***
Self-control	Age	0.43	0.19	67.59***	-0.05	-0.91
	Family residence				-0.03	-0.64
	Parental psychological control				-0.18	-6.40***
Negative risk-taking behaviors	Individuating autonomy				0.39	13.95***
	Age	0.33	0.11	29.41***	-0.25	-5.09***
	Family residence				0.03	0.77
	Parental psychological control				0.16	6.29***
	Individuating autonomy				0.04	1.30
	Self-control				-0.19	-7.31***

Notes: β is the standardized regression coefficient. ** $p < 0.01$, *** $p < 0.001$.

Table 4 Autonomy and Negative Risk-Taking Behaviors in the Mediation Effect Analysis

Effect	Pathway Relationships	Efficiency Value	Efficiency Value%	95% CI	
				Boot LLCI	Boot ULCI
Direct effect	Parental psychological control→negative risk-taking behaviors	0.16	76.19%	0.15	0.26
Indirect effect	Parental psychological control→individuating autonomy→negative risk-taking behaviors	−0.01	4.76%	−0.02	0.01
	Parental psychological control→self-control→negative risk-taking behaviors	0.03	14.29%	0.02	0.06
	Parental psychological control→individuating autonomy→self-control→negative risk-taking behaviors	0.01	4.76%	0.01	0.02
Total indirect effect		0.05	23.81%	−0.14	−0.02
Total effect		0.21	100	0.02	0.06

Control → Individualized Autonomy → Self-Control → Negative Risk-Taking Behavior, the indirect effect of this path was significant (Figure 2).^{76,77}

Discussion

In conclusion, this study investigates the relationship between parental psychological control and negative risk-taking behaviors and the mediating function of autonomy and self-control by developing a chain mediation model. The findings suggest that parental psychological control directly and positively predicts negative risk-taking behaviors among college students and that the chain mediation of autonomy and self-control holds true. The findings support the three hypotheses proposed in this study.

Parental Psychological Control and Negative Risk-Taking Behaviors

The study's findings evaluated the first hypothesis, which states that parental psychological control can both positively and directly predict college students' negative risk-taking behaviors. This aligns with the findings of earlier research using a sample of middle school pupils in China.^{14–17} Although some studies have found that the two present a nonlinear relationship,¹⁸ it's also plausible that a quadratic link exists between problematic behaviors and parental control, only that the best-fit solution is negatively linear or positively linear.⁷⁸ In the context of Eastern and Western cultures, there are certain differences in parents' concepts of family education. Chinese parents' educational expectations, living arrangements, caregiving styles, and communication styles may all reveal their control over their children to some extent. Given that the family is the primary setting for a person's development and life, as one of the negative parenting styles the influence of psychological control on college students' negative risk-taking behaviors is continuous and long-lasting, and

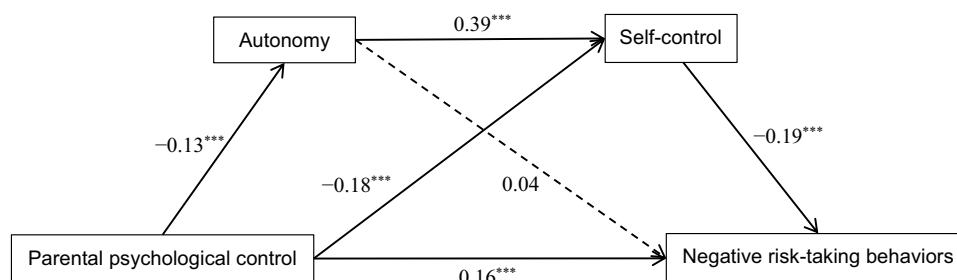


Figure 2 Chain-mediation model testing the indirect link between parental psychological control and negative risk-taking behaviors exhibited by college students through autonomy and self-control.

Note: ***p<0.001.

this influence still exists even when the college students have already entered college life. Parental psychological control fails to adequately satisfy college students' need for autonomy, threatens their freedom, increasing the possibilities that they will engage in these risky behaviors. The findings are consistent with resistance theory.³³ College students who experience greater parental psychological control as they grow up are more likely to take risks and engage in negative risky activities. This study not only enriches the research on the association between parental psychological control and negative risk-taking behaviors, but also provides empirical evidence for effective interventions on college students' negative risk-taking behaviors in the future. For example, we should pay more attention to the power of parenting styles in intervening in college students' risk-taking behaviors, as well as to the shaping and nurturing of adolescents at the level of autonomy and sense of self-control.

The Chain Mediating Effect of Autonomy, Self-Control Between Parental Psychological Control and Negative Risk-Taking Behaviors of College Students

Based on the findings, self-control moderates the negative risk-taking behaviors that college students exhibit as a result of parental psychological control. In particular, Hypothesis 3 was confirmed: college students with lower levels of self-control were more probable to participate in negative risk-taking behaviors, and self-control significantly and negatively predicted negative risk-taking behaviors. Adolescents exposed to negative parenting have impeded development of self-control, which was a major contributing factor to their risk-taking behaviors. Put another way, unfavorable parenting practices that rely on psychological control are more likely to prevent college students from having the chance to grow up with self-discipline on their own. Research has shown that parental monitoring discipline or regulating guidance of adolescents' behavior is not always effective when they have difficulty in suppressing their impulses, which can exacerbate the likelihood of risk-taking behaviors among adolescents.⁵³ Moreover, parental psychological control not only cause internal and external stress to college students, but also deplete their self-control resources, and college students with low levels of self-control are more probable to act impulsively and take risks, which is consistent with the self-control energy model.⁷⁹ This suggests that in order to create a more intimate and harmonious parent-child relationship and reduce the possibility of college students' negative risk-taking behaviors, parents should give their children enough trust, understanding, and positive affirmation support; lower their high sense of control over them; respect and strive to satisfy their inner needs; and create a family atmosphere full of love and understanding, equality, and democracy.

Although excessive parental psychological control may diminish adolescents' autonomy, it does not directly lead them to adopt negative risk-taking behaviors. In other words, autonomy did not significantly mediate the correlation between parental psychological control and negative risk-taking behavior, and thus Hypothesis 2 was not confirmed. However, it is interesting to note that autonomy acts indirectly on negative risk-taking behavior by influencing self-control. This implies that autonomy and self-control constitute a chain mediation between parental psychological control and college students' negative risk-taking behaviors, thus validating Hypothesis 4. This study demonstrates the critical role that self-control plays in the process by which parental psychological control shapes negative risk-taking behaviors. It also suggests that people actively control their behavior to align it with their own expectations, social norms, and personal values. Compared to the autonomy, self-control plays a more direct and critical role in influencing negative risk-taking behavior. It is one of the most significant elements that is impossible to overlook in the process of personal growth, and it is also a major factor in determining the negative risk-taking behaviors of teenagers.

Additionally, based on the validated Hypothesis 4, college students' autonomy decreases, and the autonomy support they receive decreases accordingly. In this state, there may be a greater loss of self-control resources in college students who experience situations when they feel forced or pressed to exercise self-control, thus increasing the frequency of negative risk-taking behaviors, which aligns with the idea of Strength of Self-Control model.⁶⁹ Negative parenting with psychological control indirectly shapes children's social behavior by influencing their autonomy and self-regulation.⁸⁰ This suggests that we can encourage parents to adopt appropriate parenting styles to prevent negative risk-taking behaviors among college students. Specifically, reducing the psychological control over college students, changing the autonomy-supportive parenting style, giving them emotional attention and willful respect, and satisfying their need for

relational autonomy will improve their self-control, thus further preventing their negative risk-taking behaviors and promoting the positive development and social adaptation of college students.

Limitations and Future Directions

In order to thoroughly examine the impact of parental psychological control on college students' negative risk-taking behaviors and its mechanism of action, this study built a chain mediation model. This model offers helpful guidance for preventing and minimizing college students' negative risk-taking behaviors in the future. Firstly, the study used a cross-sectional design, which could not comprehensively examine the developmental changes and characteristics of individuals' perceived level of parental psychological control, autonomy, level of self-control, and negative risk-taking behaviors at different developmental stages, and thus could not accurately examine the subjects' causal relationships among the variables. In the future, the directionality among variables and the development of negative risk-taking behaviors can be further explored using a tracer design or experimental study. Second, the data collection of negative risk-taking behaviors in this study was based on self-reporting, and subsequent studies could use contextualized experimental methods, such as the "Dangerous Driving Game" and the "ART Task" to obtain more realistic results. Finally, this study utilized a convenience sampling method and therefore has some limitations in terms of the representativeness of the study sample. Future studies may consider using more rigorous sampling methods such as random or stratified sampling and expanding the range of sample selection to increase the diversity and representativeness of the sample.

Data Sharing Statement

The raw data supporting the conclusions of this paper can be obtained by contacting the corresponding author.

Ethics Statement

This research was carried out in accordance with the ethics committee permission of Hunan University of Science and Technology, and complied with the Declaration of Helsinki. All participants consented to participate in advance.

Acknowledgments

Sincere thanks to those who have worked and contributed to this thesis.

Funding

Humanities and Social Science Fund of Ministry of Education of China (Grant No. 23YJA190011) and Research project on teaching reform of higher education in Hunan Province (Grant No. HNJG-20230627) provided financial support for this thesis.

Disclosure

The authors declared that they had no conflicts of interest in this work.

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