






# The Relationship between Parental Phubbing Behavior, Alienation, Social Support and Academic Burnout among High School Students

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**Abstract.** Parental phubbing behavior plays a pivotal role in shaping the psychological and emotional development of high school students. This study investigates the relationship between parental phubbing and academic burnout among high school students, focusing on the mediating role of alienation and the moderating role of social support. A survey was conducted with 511 high school students from Shanxi and Heilongjiang Provinces in China. Data were analyzed using SPSS 25.0. The results show a significant positive correlation between parental phubbing and both academic burnout and alienation. Similarly, academic burnout is positively correlated with alienation, while alienation is negatively correlated with social support. Alienation was found to mediate the relationship between parental phubbing and academic burnout. Furthermore, social support fully moderates the impact of alienation on academic burnout. This study provides practical guidance for parents on reducing phubbing behavior to support the academic and mental well-being of high school students.

**Keywords:** Parental Phubbing Behavior, Academic Burnout, Social Support, Alienation, High School Students.

## 1 Introduction

### 1.1 Research Background and Purpose

Phubbing derived from the fusion of “phone” and “snubbing”, refers to excessive engagement with smartphones to the neglect of the immediate social environment [1]. Parental behavior has a significant impact on the psychological development of adolescents [2]. According to research findings, parental phubbing behavior significantly affects academic performance [3]. Academic burnout refers to students’ emotional exhaustion, cynicism, and diminished sense of personal accomplishment resulting from academic pressure, workload, or other psychological factors in the learning process [4]. Further study finds that, there is a positive correlation between increased parental phubbing behavior and an increased risk of academic burnout among students in grades 4 to

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9 [5]. In environments with high pressure from exam-oriented education, academic burnout among high school students appears to be more severe compared to younger minors. However, there is limited research on the impact of parental phubbing behavior on academic burnout among high school students.

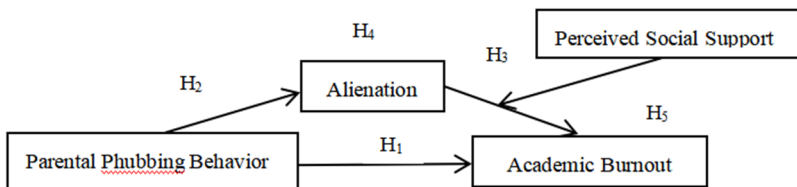
Alienation is a negative emotional state where individuals struggle to form meaningful connections with family, school, or peers, leading to feelings of helplessness, meaninglessness, and loneliness [6]. According to self-determination theory, unmet psychological needs stemming from parental phubbing can foster alienation, which diminishes motivation, induces emotional exhaustion, and promotes disengagement, all of which contribute to academic burnout. Research has shown that parental phubbing disrupts parent-child interactions [7], and there is a significant positive correlation between phubbing behavior and alienation [8]. Furthermore, alienation has been found to predict academic burnout [9]. Therefore, alienation may act as a key mediator in the relationship between parental phubbing and academic burnout.

Moreover, the buffering theory suggests that social support can enhance psychological resilience, alleviating the emotional exhaustion, cynicism, and diminished sense of accomplishment associated with academic burnout caused by alienation. In other words, social support may moderate the relationship between alienation and academic burnout, helping to reduce its adverse effects. Additionally, research has shown that perceived social support significantly helps individuals cope with academic pressure, reduce academic burnout, and promote positive academic and daily life, specifically, perceived social support a significant negative predictor of academic burnout [10].

However, limited research explores the relationship between parental phubbing behavior and academic burnout among high school students, as well as the underlying mechanisms. To fill these gaps, the research expands the scope and examines groups of high school students. We also extend previous studies to examine the mediating role of alienation in the relationship between parental phubbing behavior and academic burnout, and the moderating effect of perceived social support among the relationship between alienation and academic burnout.

## 1.2 Research Hypotheses

Drawing from existing literature and theoretical frameworks, this study proposes the following hypotheses, illustrated in the hypothesized model shown in Figure 1:



**Fig. 1.** A hypothesized moderated mediation model.

H1: Parental phubbing behavior can positively predict academic burnout among high school students.

H2: Parental phubbing behavior can positively predict feelings of alienation among high school students.

H3: Alienation can positively predict academic burnout among high school students.

H4: Parental phubbing behavior can positively predict academic burnout through the mediating effect of alienation among high school students.

H5: Social support can negatively moderate the relationship between alienation and academic burnout among high school students.

## 2 Research Method

After obtaining the informed consent of the school leaders, class teachers, parents and the students themselves, an online survey was conducted for this quantitative study, which employed a non-experimental, causal-correlational research design. The research focused on both Shanxi and Heilongjiang provinces, targeting high school students. The study first utilized stratified sampling to divide the population into two subgroups: North and South. Simple random sampling was then used to select two schools from each region, followed by another round of simple random sampling to choose 600 participants. After excluding questionnaires with patterned responses and excessive missing data, 511 (54.40% female,  $Mage = 17.01$ ,  $SD = 0.88$ ) valid questionnaires were obtained, resulting in an efficiency rate of 85.2%, as detailed in Table 1. Using the Phubbing Scale [11, 12], Middle School Students' Academic Burnout Scale [13], Adolescent Students' Sense of Alienation Scale [14], and Multidimensional Scale of Perceived Social Support, data were collected to measure their levels of phubbing behavior, academic burnout, sense of alienation, and perceived social support. Existing research has demonstrated that all the instruments have good reliability and validity, making them suitable for the age characteristics of the selected study population. Following the completion of the survey, all questionnaires were collected systematically. SPSS 25.0 was used for data analysis, including descriptive statistics, reliability analysis, and correlation analysis among variables. The SPSS 25.0 macro program PROCESS v4.1 was used to conduct structural equation modeling and moderated mediation effect analysis.

**Table 1.** The Descriptive Statistics.

Variable	Type	Number	Percentage
Gender	Female	278	54.40
	Male	233	45.60
Grade	Ten	191	37.38
	Eleven	163	31.90
	Twelve	157	30.72
Area	Rural	209	25.90
	Urban	598	74.10
Only Child	Yes	199	38.94%
	No	312	61.06%

The descriptive statistics of the demographic variables are presented in Table 1.

### 3 Results

#### 3.1 Common Method Bias

To evaluate common method bias, Harman's single-factor test was performed. The analysis revealed 12 factors with eigenvalues exceeding 1, and the first factor accounted for 18.89% of the variance, which is below the critical 40% threshold. Therefore, it can be concluded that common method bias was not a significant issue in this study.

#### 3.2 Correlation Analysis

Table 2 displays the descriptive statistics and correlation coefficients for the variables.

**Table 2.** Descriptive Statistics and Correlation Coefficients for Variables.

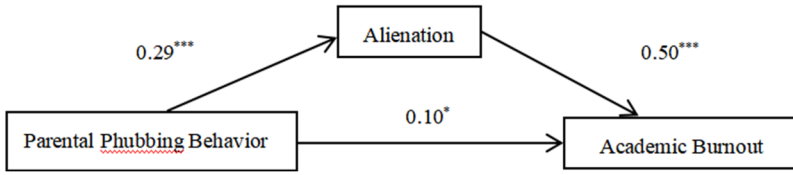
Variable	<i>M</i>	<i>SD</i>	Parental phubbing behavior	Social support	Alienation	Academic burnout
Parental phubbing behavior	2.55	0.68	1			
Social support	4.03	1.03	0.09*	1		
Alienation	3.68	0.96	0.30**	-0.27**	1	
Academic burnout	2.60	0.58	0.23**	-0.10*	0.52**	1

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

Relevant analysis showed that parental phubbing behavior was significantly positively correlated with social support, alienation, and academic burnout. Social support was significantly negatively correlated with alienation, and academic burnout. Alienation was significantly positively correlated with academic burnout.

#### 3.3 The Moderated Mediation Model Test

After standardizing all the variables in the model, the research used the SPSS macro-PROCESS, developed by Hayes, to test the moderated mediation model. First, Model 4 was employed to examine the mediating effect of alienation. The results are shown in Figure 2.

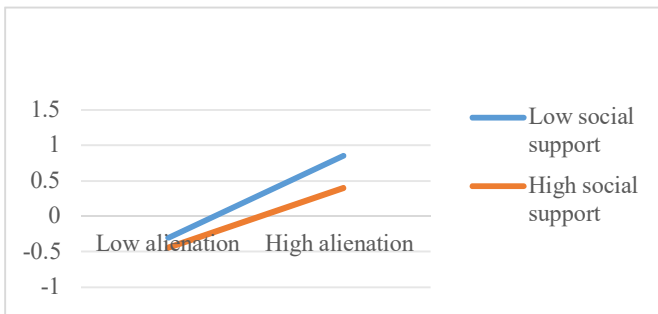


**Fig. 2.** The mediation effect path diagram ( $N = 511$ ).

The mediation effect was assessed for significance using the bias-corrected percentile bootstrap approach with 5,000 resamples. The bootstrap 95% confidence interval for the direct effect of parental phubbing behavior on academic burnout was [0.16, 0.33], and for the mediating effect of alienation, it was [0.10, 0.20]. As shown in figure 2, these results indicated that parental phubbing behavior not only directly negatively predicted academic burnout, but also that alienation partially mediated the relationship between parental phubbing behavior and academic burnout. The direct effect (0.10) and the mediating effect (0.15) accounted for 40.0% and 60.0% of the total effect (0.25), respectively.

**Table 3.** Regression results predicting Mediation and Moderation ( $N=511$ ).

Outcome variables	Predictors	Indexes for model fit			Significant level	
		<i>R</i>	<i>R</i> <sup>2</sup>	<i>F</i>	$\beta$	<i>t</i>
Academic burnout		0.62	0.39	44.98***		
	Parental phubbing be-				0.08	2.17*
	Alienation				0.52	13.32***
	Social support				-0.30	-7.95***
	Alienation $\times$ Social sup-				-0.18	-4.83***



**Fig. 3.** The moderating effect of perceived social support. ( $N = 511$ ).

All variables in the model are standardized, and this applies to all subsequent analyses. The moderated mediation model was tested using Model 59 in the SPSS macro-PROCESS. The findings, presented in Table 3, revealed a significant positive prediction of parental phubbing behavior by academic burnout ( $\beta = 0.08, p < 0.05$ ). Alienation was found to significantly and positively predict academic burnout ( $\beta = 0.52, p <$

0.001), and the interaction between alienation and social support significantly and negatively predicted academic burnout ( $\beta = -0.18, p < 0.01$ ). Social support moderated the relationship between alienation and academic burnout, influencing the second half of the path in the hypothesized model. Further research (see Figure 3) reveals that when social support is at a low level ( $M-1SD$ ), alienation significantly positively predicts academic burnout. However, when social support is at a high level ( $M+1SD$ ), the positive predictive effect of alienation on academic burnout weakens.

## 4 Discussions and Conclusions

The findings indicate that (1) The parental phubbing behavior among high school students are significantly positively correlated with academic burnout and alienation. There is also a significant positive correlation is found between academic burnout and alienation. Conversely, a significant negative correlation is found between alienation and social support. (2) Parental phubbing behavior influences academic burnout through the mediator of alienation. (3) Social support shows a complete moderating effect within the relationship between alienation and academic burnout.

This study contributes to the understanding of the mechanisms and conditions under which parental phubbing behavior affects academic burnout among high school students. Parental phubbing behavior is a significant risk factor for academic burnout and may have potential negative effects on the mental health of high school students. The higher the level of parental phubbing behavior, the higher the level of alienation of high school students. Due to the lack of communication and interaction between parents and their children, their children often feel neglected, resulting in a sense of alienation. Social support has a moderating effect between alienation and academic burnout, and with the increasing level of social support, it is beneficial to reduce the effect of alienation on academic burnout.

To prevent and intervene in academic burnout, it is recommended that parents minimize or eliminate parental phubbing behavior, enhance parent-child interaction patterns, and promote positive parent-child relationships. Additionally, schools should prioritize student individuality to meet emotional needs of students. These effects promote the holistic development of high school students and the cultivation of optimal learning outcomes. Specifically, the following strategies can be tried:

(1) Establish Tech-Free Time: Encourage parents to designate specific periods, such as during meals or before bedtime, where devices are put away, promoting face-to-face interactions and reducing parental phubbing.

(2) Active Listening: Parents should put down their phones while communicating with their children, actively cultivating empathy to reduce feelings of alienation.

(3) Create Shared Activities: Parents and children can engage in activities together, such as games or hobbies, to strengthen communication and diminish alienation.

(4) Regular Emotional Check-Ins: Through open communication, parents can detect early signs of alienation or academic burnout, better understanding their child's social support system and psychological needs, and providing timely emotional support to prevent and intervene in academic burnout.

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