

The Effect of Attachment Style on Academic Burnout: The Mediating Role of Self-esteem and Self-efficacy

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ABSTRACT

With the increasing academic competition, the problem of academic burnout, which has serious negative effects on students' physical and mental health, has become more prominent. Previous studies have proved that the attachment relationship, as a factor that can affect people's internal working mode, significantly impacts academic burnout. This study used four scales (Adult Attachment Scale, Academic Burnout Scale, Self-Esteem Scale, and Self-Efficacy Scale) to measure the four psychological performances (i.e., adult attachment, academic burnout, self-esteem, and self-efficacy) of 266 college students, with self-esteem and self-efficacy as mediating variables, and to explore the influence mechanism of attachment styles on academic burnout. The results show that self-efficacy plays a mediating role in the impact of attachment relationships on academic burnout, but the mediating function of self-esteem is not significant. This research explored the relationship and influence mechanism between attachment relationship and academic burnout. The future study should expand the sample size, enrich the sample hierarchy, or use long-term follow-up surveys to further confirm the results of this research.

Keywords: attachment relationship, academic burnout, self-efficacy, self-esteem

1. INTRODUCTION

With the continuous growth of the scale of college students, the "only growth without expansion model" brought about by limited educational resources and employment resources has become more and more serious, and the problem of academic burnout among college students has become more and more prominent. The concept of academic burn-out comes from the study of job burn-out [1]. Burnout refers to the decline in the individual's ability to cope with stress, and the consequent physical and emotional burnout, leading to negative self-images, negative attitudes towards the job, and feelings of disconnection from others [2]. On the other hand, academic burnout mainly appears in the student population. Refers to the fatigue caused by high academic requirements and requirements (educational burnout), negative attitudes and lack of interest in the field of study (not interested in academics), and educational incompetence (ineffective academics) [3]. Academic burnout usually brings sadness, loss of interest

in learning, etc., which will reduce learning motivation and have a negative impact on the quality of learning and performance, and even the mental health of students [4]. Studies have also shown that academic burnout can also lead to absenteeism, dropouts, physical fatigue, insomnia, alcoholism, and family problems [5, 6]. In order to reduce the negative impact of academic burnout on individuals and thus carry out more effective interventions, it is of great significance to explore the causes and influence mechanisms of academic burnout.

Academic burnout is often accompanied by frustration in academic exploration, so under what circumstances can an individual remain active in exploration and even devote himself to it even in a difficult situation? Attachment theory believes that when an individual has a secure parent-child attachment relationship, he can still devote himself to exploratory activities even when facing difficulties. The reason lies in the protection, support, accessibility, and strength provided by the attachment object (usually parents),

ensuring the safety and stress-free feeling of the individual during exploration activities, thereby improving the willingness and quality of exploration [7]. Hazan divides attachment into three types: security, avoidance, and anxiety [8]. Bartholomew proposed four "prototypes" of adult attachment based on the Bowlby theory: safe (positive self and others models), gravitational (negative self-models, positive others' models), and contemptuous (positive self-models, others model is negative) and fear type (both self and others model are negative), the latter three are all non-safe [9]. Aspelmeier and Kerns studied the attachment and academic exploration of college students. And the results showed that the higher the safety attachment score, the lower the academic burnout, and a more positive attitude and curiosity towards the social aspects of academic tasks (such as working with others and seeking help from others) also stronger [10]. In Ayala Malach's research on Israeli MBA groups, Hungarian sociology graduate students, and Israeli dialysis nurse groups, the relationship between attachment relationship and academic burnout has also been confirmed. The secure attachment style group is less likely to feel burnout, and the insecure attachment styles of groups are more prone to burnout [11]. In the past empirical studies, most of the attachment relationships were studied as a whole part to study their effects, and there was a lack of detailed differentiation of the effects of different attachment types.

Since the level of academic burnout is affected by attachment relationships, how do attachment relationships play a role in academic burnout? According to the attachment theory, the quality of the attachment relationship determines an individual's internal working mode for himself and others, and this working mode mainly affects the individual's level of self-cognition and self-efficacy [12].

Bandura defines self-efficacy as an individual's judgment, belief, or self-control and feeling about whether he can complete an activity at a certain level [13]. Markleer defines self-esteem as the internal reaction of the individual's interpersonal relationship with others and is closely related to evaluating the relationship with others [14]. Some studies have proved the relationship between job burnout and self-efficacy. That is, self-efficacy can significantly negatively predict job burnout [15]. Duran and others explored academic participation and burnout indicators and found that stress and academic self-efficacy are related to learning burnout [16]. In a survey of vocational students, Wang found that the academic self-efficacy score and total score are extremely negatively correlated with learning burnout. The higher the academic self-efficacy score, the lower the degree of learning burnout [17]. At the same time, some studies have found that both self-esteem and self-efficacy have significant predictive effects on academic burnout. The higher the level of self-esteem and self-efficacy, the

lower the level of academic burnout. When self-esteem is used as an intermediary variable in the model of the effect of self-efficacy on academic burnout, the whole model has stronger explanatory power [18]. Zeng's research on 230 college students from Southwest University also found that self-esteem and academic self-efficacy are significantly negatively correlated with learning burnout.

The research on the impact of attachment relationship on academic burnout is more theoretical analysis level in the existing research, while the data research is slightly lacking. Therefore, we can use this research to further explore why the characteristic strength of attachment relationship predicts burnout and understands the mediating effects of self-esteem and self-efficacy to better understand how attachment relationships affect academic burnout.

Based on the above discussion, this research hopes to explore the influencing factors of college students' academic burnout in our country and analyze its influencing mechanism to better intervene in the academic burnout of college students in our country. This article explored the effects of attachment anxiety and attachment avoidance on academic burnout starting from the attachment relationship. It established a model to explore the mediating role of self-esteem and self-efficacy. And we make the following assumptions: (1) Attachment anxiety and academic burnout are positively correlated; (2) Attachment avoidance and academic burnout are positively correlated; (3) Self-efficacy mediates the relationship between attachment styles and college students' academic burnout; (4) Self-esteem mediates the relationship between attachment styles and college students' academic burnout; (4) The mediating effects of self-esteem and self-efficacy are different.

2. METHOD

2.1. Participants

A total number of 266 Chinese college students (male = 68, female = 198), aged between 18 and 25 ($M = 19.93$, $SD = 1.344$), participated in a web-based survey, and 266 surveys were collected. Participants were recruited via the convenience sampling method. Therefore, 89% of the participants come from colleges in Beijing and Wuhan. The rest are based in northern and southern China, and a small number of them are from overseas institutions. Informed consent was collected from every participant prior to data collection.

2.2 Design

In light of the extant literature and our hypothesis, the independent variable in our study was attachment style. Self-esteem and self-efficacy were the two mediators in our parallel mediation model. The dependent variable was academic burnout. Self-report measures were widely

adopted in previous research that involved the four variables. Hence the four variables were measured using one web-based survey where each variable was measured with one established scale.

2.3 Materials

Attachment style

Attachment style was measured with the Adult Attachment Scale (AAS) [20], which consists of 18 items scored on a 5-point Likert-type scale. The translated version used in [21] was adopted. The AAS measures three attachment styles which are “Secure”, “Anxious” and “Avoidant” based on respondents’ score on the three subscales, i.e. “Anxiety”, “Dependence” and “Close”. In the alternative scoring method suggested by [20], scores on “Close” and “Dependence” subscales can be considered as one dimension named as “Avoidance”. Therefore, our models involved “Anxiety” and “Avoidance” respectively as the individual variable in two parallel mediation models. Attachment anxiety was measured with “Anxiety” subscale (i.e., Q3, Q4, Q9, Q10, Q11, Q15). Attachment avoidance was measured using “Close” and “Dependence” subscales (i.e., Q1, Q2, Q5, Q6, Q7, Q8, Q12, Q13, Q14, Q16, Q17, Q18). Cronbach’s alpha coefficients were .72 for Anxiety, .69 for Close, and .75 for Depend [20]

Self-esteem

The widely used Rosenberg Self-Esteem Scale [23], the translated version provided in [24], was used. The scale measured both positive and negative feelings about the self with 10 items in a 4-point Likert scale format ranging from “Strongly Agree” to “Strongly Disagree”. Cronbach’s alpha coefficient of this scale was 0.709 [25].

Self-efficacy

The measurement of self-efficacy was conducted using the translated version of the 10-item General Self-Efficacy Scale (GSES) [26] [27]. Cronbach’s alpha of this scale was .87 [27].

Academic burnout

Considering that our participants are all Chinese native-speakers, we used the Academic Burnout Scale (ABS) [28] to measure the level of burnout among participants. This scale was particularly chosen as it was edited in Chinese, suitable for participants with Chinese higher education background, and easier for respondents to understand. This scale has also been adopted in a large body of previous research on academic burnout in China. The scale consisted of 20 questions that ask participants to report their answers on a 5-point Likert scale that ranged from “Strongly Disagree” to “Strongly Agree”. Overall, ABS has a Cronbach’s α of 0.865, indicating a good level of reliability [28].

Combined these scales in one, our survey is a 60-item survey consists of four sub-scales.

2.4 Procedure

The survey was edited on and distributed via WJX.cn. Before the survey session, details of the study were communicated to the participants in the form of a letter. Participants proceeded to the survey session once they gave their informed consent. The four sub-scales were presented in four distinct sessions that were arranged in a fixed sequence and were titled with a one-sentence description of the psychological construct it aimed to measure. Upon completing the survey, the participants were appreciated and received immediate feedback based on their survey scores, e.g., their attachment style and a short description. Completing the whole survey takes 2-10 minutes.

2.5 Data Analysis

The two parallel mediation models were tested using the IBM SPSS Macro PROCESS for Windows, Version 3.5. Prior to that, IBM SPSS for Windows, Version 23.0 was used to conduct a Principle Factor Analysis for item parceling, then Mplus for MacOS, Version 8.1 was used to examine the model fit for our hypothesized mediation models.

3. RESULTS

3.1 Descriptive Statistics

The descriptive analysis results are presented in Table 1.

3.2 Correlation Matrix

As presented in Table 2, *attachment anxiety* and *attachment avoidance* scores both have negative correlation with *self-efficacy* ($r_{anself} = -.228, p < .001$; $r_{cdself} = -.243, p < .001$), and positive correlation with *academic burnout* ($r_{anburnout} = .347, p < .001$; $r_{cdburnout} = .445, p < .001$) with statistical significance. However, neither of them are significantly correlated with *self-esteem*.

Meanwhile, the two mediators, *self-esteem* and *self-efficacy*, are significantly correlated with each other ($r_{sesfes} = .355, p < .001$).

The scores on *academic burnout* are significantly and positively correlated with scores on both attachment dimensions, and on both mediators ($r_{anburnout} = .347, p < .001$; $r_{cdburnout} = .445, p < .001$; $r_{sefburnout} = .148, p < .05$; $r_{sesburnout} = .197, p < .001$). The strongest correlation lays between *attachment avoidance* and *academic burnout*.

3.3 Parallel Mediation Models

Upon completion of reverse scoring, a Principal Factor Analysis was performed using IBM SPSS Statistics for Mac, Version 26.0 for item-parceling as preparation for assessments of model fit using Mplus Editor for Mac, Version 1.6. There are two parallel mediation models in our study, one with *attachment anxiety* as the individual variable, and one with *attachment avoidance* as the individual variable. The value of comparative fit index (or CFI) was referred to in the assessment of fit for these two models. The CFI value was 0.833 for the *attachment anxiety* model, and 0.742 for the *attachment avoidance* model. According to the criterion suggested by Hu & Bentler's [29], a CFI value over 0.9 would indicate that the model is acceptable. Both of our models do not have a good fit in light of this criterion. However, considering that we are exploring and testing a new model, we would assume that the model fit would improve in future studies with increased sample size. With this in mind, we proceeded with the mediation model testing with *attachment anxiety* and *attachment avoidance*, respectively, as the individual variables; *self-esteem*, and *self-efficacy* as the mediators; and *academic burnout* in the two mediation models.

Results indicated that *attachment anxiety* score is indirectly related to *academic burnout* through its relationship with *self-efficacy*. *Attachment anxiety* is a significant negative predictor of *self-efficacy* ($b = -.1955$, $s.e. = .0514$, $p < .05$), but not of *self-esteem* ($b = .0246$, $s.e. = .0260$, $p = .3445$). *Attachment anxiety* is a significant positive predictor of *academic burnout*, ($b = .5379$, $s.e. = .0807$, $p < .001$), so is *self-efficacy* ($b = .3235$, $s.e. = .1005$, $p < .05$). However, *self-esteem* is not a significant predictor of *academic burnout* ($b = .3416$, $s.e. = .1984$, $p = .0863$).

Because zero (the null) does not fall between the lower and upper bound of the 95% confidence interval, we infer that the total effect of *attachment anxiety* on *academic burnout* is significantly different than zero.

A 95% bias-corrected confidence interval based on 10,00 bootstrap samples indicated that the indirect effect

through *self-efficacy* ($a_1b_1 = -0.0632$), holding all other mediator variables constant, was entirely below zero (-0.1211 to -0.0161). In contrast, the indirect effects through *self-esteem* were not different from zero (-0.0092 to 0.0607 ; see Figure 1 for the effects of these pathways). Despite the non-significant indirect effect of *self-esteem*, the total indirect effect of *self-esteem* and *self-efficacy* is significant according to the bootstrap samples test, indicating that overall the model stands.

Results indicated that *attachment avoidance* score is also indirectly related to *academic burnout* only through its relationship with *self-efficacy*. *Attachment avoidance* is a significant negative predictor of *self-efficacy* ($a_1 = -.5330$, $s.e. = .0514$, $p = .001$), but not of *self-esteem* ($b = -2.4292$, $s.e. = .0260$, $p = .0783$). *Attachment avoidance* is a significant positive predictor of *academic burnout*, ($b = 8.0928$, $s.e. = .0807$, $p < .001$), so is *self-efficacy* ($b = -.4067$, $s.e. = .1005$, $p < .001$). However, *self-esteem* is not a significant predictor of *academic burnout* ($b = -.1782$, $s.e. = .1984$, $p = .3490$).

A 95% bias-corrected Bootstrap confidence interval based on 50,00 bootstrap samples indicated that the indirect effect through *self-efficacy* ($a_1b_1 = -1.8764$), holding all other mediators constant, was entirely below zero (-1.8764 to $-.2414$). In contrast, the indirect effects through *self-esteem* were not different from zero ($-.1415$ to $.6502$; see Figure 2 for the effects of these pathways). Not only is the indirect effect of *self-esteem* non-significant, the total indirect effect of the *self-esteem* and *self-efficacy* is also non-significant according to the bootstrap samples test, which indicates that the model is generally valid.

We further tested two single mediation models where *self-efficacy* and *self-esteem* were set as the single mediator, and the dependent variable and independent variable remained the same. The results turned out the same, as the single mediation model test showed no significant path through *self-esteem*, whether in the relationship between *attachment anxiety*, or *avoidance*, and *academic burnout*.

4. FIGURES AND TABLES

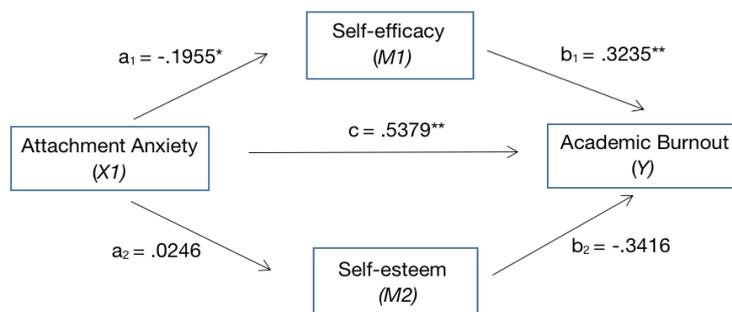


Figure 1. The mediation model with attachment anxiety as the individual variable

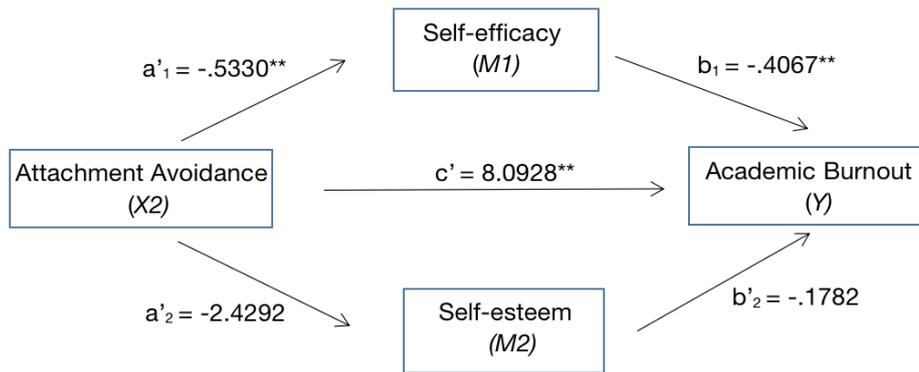


Figure 2. The mediation model with attachment anxiety as the individual variable

Table 1. Descriptive Statistics for The Attachment Anxiety, Attachment Avoidance, Self-Efficacy, Self-Esteem and Academic Burnout

Variables	N	Minimum	Maximum	Mean	SD
Attachment Anxiety	266	1	5	2.81	1.00
Attachment Avoidance	266	1.50	5	2.81	.52
Self-efficacy	266	10	40	27.50	5.14
Self-esteem	266	19	36	25.61	2.54
Academic Burnout	266	32	100	60.40	8.35

Table 2. Correlation Matrix for The Attachment Anxiety, Attachment Avoidance, Self-Efficacy, Self-Esteem and Academic Burnout

Variables	Attachment Anxiety	Attachment Avoidance	Self-efficacy	Self-esteem	Academic Burnout
Attachment Anxiety	1	.712**	-.228**	.058	.347**
Attachment Avoidance	.712**	1	-.243**	.108	.445**
Self-efficacy	-.228**	-.243**	1	.355**	.148*
Self-esteem	.058	.108	.355**	1	.197**
Academic Burnout	.347**	.445**	.148*	.197**	1

5. DISCUSSION

5.1 The relationship between attachment style and academic burnout

Studies have found that anxiety and avoidance dimensions in attachment are significantly positively correlated with academic burnout, while self-esteem and self-efficacy are significantly negatively correlated with the anxiety dimension, avoidance dimension, and academic burnout. These results are the same as the results in most previous studies [29]. For example, the

related studies have found that academic burnout has significant differences in different attachment styles.

As an individual's internal working model, attachment styles can be generally divided into four different types by anxiety dimension and avoidance dimension: security attachment, anxiety attachment, avoidance attachment, and fear attachment. The last three attachments are collectively called insecure attachments. From the relationship between the two dimensions of attachment and the level of academic burnout, it can be seen that the level of academic burnout is influenced by internal factors such as personality traits, ego, and coping

strategies and external factors such as academic pressure and individual's adaptation to the home-school situation [30]. Attachment style is an internal psychological quality that includes cognition, personality, and adaptability. Previous studies have shown that attachment style is significantly related to many internal and external factors and significantly impacts these factors [31]. That is to say, individuals with secure attachment have more appropriate coping styles when facing problems, and they are difficult to produce anxiety and avoidance emotions. They also have better adaptability to academic pressure and have a relatively low level of academic burnout. Therefore, the anxiety and avoidance dimension of attachment can significantly predict the level of academic burnout. This means people with secure attachment style are less likely to burnout than people with an insecure attachment style.

5.2 The mediating effect of self-esteem and self-efficacy in the influence of attachment style on academic burnout

We included four variables into the double-mediator model to further explore the relationship between the anxiety and avoidance dimension of attachment and academic burnout. The results of our analysis show that self-efficacy plays a mediating role between the two dimensions of attachment and academic burnout. Still, self-esteem does not play a mediating role, which supports hypothesis 3.

According to the attachment internal working model theory [12], it can be known that the influence of attachment on the individual psychological state is acted through the internal working model. The level of anxiety and avoidance tendency in attachment will impact the individual's cognition of the outside world from the inside. However, high anxiety and avoidance tendency will make individuals more likely to produce anxiety or avoidance. Self-efficacy [13], as an individual's self-perception of what level he or she can complete a certain behavioral operation before it is performed, is also the cognition of the outside world generated by the individual. It is closely related to anxiety avoidance tendency in attachment. When individuals make negative predictions about their studies, their anxiety and avoidance will increase, affecting and reducing their self-efficacy and ultimately leading to academic burnout. As a "social relationship measuring instrument"[14], self-esteem is a subjective measure of an individual's interpersonal relationship with the outside world. It is not only affected by the individual's internal self-evaluation but also has a strong correlation with the external attitude of others. Therefore, when individuals have a negative prediction of academic status, they will observe their peers' evaluation of academic status at the same time

while their self-esteem level decreases. Suppose their peers also have a negative prediction of academic status. In that case, their peers' reduced degree of self-esteem will be affected, so academic burnout cannot be completely predicted. Therefore, although there are significant correlations between attachment and avoidance dimensions and self-efficacy and self-esteem, self-efficacy can be used as a mediating variable between attachment and academic burnout, but self-esteem cannot.

At the same time, in our study, we found that self-esteem, self-efficacy, attachment dimensions, and academic burnout are significantly correlated. Still, self-esteem can not be used as a mediating variable between attachment and academic burnout. In this regard, we speculate from the data and believe that correlation and meditation are different. As long as there is a certain connection, they can be correlated, but it is different from meditation.

5.3 Limitation and future directions

Given the exploratory nature of the parallel mediation models suggested in this study, we proceeded with a model fit that was below our expectations. However, further validation of the two parallel mediation models with larger sample size is expected. It could be the case that the mediation models that we suggested are not the best description of the relationships between attachment anxiety/avoidance, self-esteem, self-efficacy and academic burnout. Yet, the models' goodness of fit might also improve with a sample size proportional to the parameters. Therefore, future studies are needed to explore the answer.

In our study where we examined the hypothesized pathways through which attachment anxiety/avoidance can exert influences on one's academic burnout level, we employed a cross-sectional design. Yet, we suggest that a longitudinal study being conducted in future research to see if one's level of attachment anxiety/avoidance can predict their academic burnout level in a longer term via its influence on their core self-evaluation. Such findings may inform future educational effort aimed at improving students' academic performance via an earlier intervention targeted at their, if feasible, attachment tendencies, as well as core self-evaluations.

Finally, we suggest future studies to further explore the relationship between self-esteem and academic burnout. We found a significant and positive correlation between the level of self-esteem and academic burnout of our participants, despite the insignificant correlation between self-esteem and attachment anxiety/avoidance. Such a result is partially consistent with the previous study by Mahmoudi et al. [32], where a significant

negative correlation between self-esteem and academic burnout in medical students was found, and their academic burnout was the only predictor of their self-esteem. In light of Mahmoudi's research finding, it might be the case that the relationship between self-esteem and academic burnout that we are suggesting, should be redirected. Again, answer is to be provided by future exploration on this research problem.

6. CONCLUSION

The main purpose of our study was to explore the pathways in which academic burnout act on one's academic burnout level. In light of the extant literature, we proposed two parallel mediation models where the two attachment dimensions (anxiety and avoidance) were the independent variables; the two core self-evaluation variables (self-esteem and self-efficacy) which have been found to be significantly correlated with attachment styles and academic burnout, were set as the mediators; and academic burnout was the dependent variable. With data collected from Chinese college students via an online survey, we found that both attachment anxiety and avoidance acted on academic burnout level through self-efficacy only, but not through self-esteem. Such findings implied that people with a secure attachment style would be less likely to experience academic burnout, partially because their healthy relationships with classmates and teachers offered them resources to overcome academic difficulties, and attain expected academic success eventually. Yet, people with an insecure attachment style can be more susceptible to academic stressors, due to the lack of such resources as they may have difficulties establishing relationships with teachers and classmates in the first place. Our findings direct future educational effort to improve students' capability of establishing and managing their relationships with teachers and classmates, who can offer social and professional support in cases of academic difficulties, and accordingly boost students' self-efficacy. Though one's attachment style can be relatively stable across the life span, self-efficacy can be improved with proper interventions.

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