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How social support influences university students' academic achievement and emotional exhaustion: The mediating role of self-esteem

Jie Li, Xue Han, Wangshuai Wang, Gong Sun & Zhiming Cheng

Abstract

Improving the quality of life for students has become a major concern for educational institutions. Using a sample of 262 university students (mean age 19.25 years) in China, this study investigates the mediating role of self-esteem in the relationships between social support and academic achievement and between social support and emotional exhaustion. Students in our sample completed questionnaires designed to assess their perceived social support, self-esteem, academic achievement, and emotional exhaustion. The results of path analysis suggest that self-esteem fully mediates the relationship between social support and academic achievement and the relationship between social support and emotional exhaustion. This study's implications and limitations are discussed.

Keywords: social support; self-esteem; academic achievement; emotional exhaustion; university students

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1. Introduction

People have devoted substantial attention to quality of life in the process of pursuing well-being. Additionally, enhancing the well-being of citizens is an important governmental goal. Therefore, quality of life—an individual's overall evaluation of her/his life—is a subject of tremendous interest among researchers, policy makers, and the public (Lenderking, 2005). Although existing research has focused on different socioeconomic groups, there has been limited research on quality of life among university students, who are an important group in most societies (Vaez, Kristenson, & Laflamme, 2004). This is an important research gap because, in their young adulthood, university students experience critical transitions characterized by changes, confusion, and exploration, and the choices they make during this period may have enduring ramifications (Arnett, 2000). Moreover, due to their relatively limited social experiences, university students generally have lower self-consciousness and psychological endurance than individuals who are employed, thus they are more vulnerable to psychological problems (Bask & Salmela-Aro, 2013). Previous studies have found that university students' quality of life is a predictor of dropout or withdrawal (Timmons, 1978), and has a significant effect on their subjective well-being (Sirgy, Grzeskowiak, & Rahtz, 2007), as well as on their physical and mental health (Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009). Therefore, university students' quality of life is of significant concern (Benjamin & Hollings, 1995). In this article, we investigate university students' quality of life by focusing on academic achievement and emotional exhaustion.

Academic achievement, which is an important aspect of life for university students (Xiao, Tang, & Shim, 2009) and is typically regarded as the core criterion for determining a student's success at university, has been found to positively predict life satisfaction (Lepp, Barkley, & Karpinski, 2014). Therefore, we use academic achievement as the first indicator of university students' quality of life. In addition, university students often suffer pressures related to academic requirements, interpersonal relationships, and job searching (Ross, Niebling, & Heckert,1999), making them prone to emotional exhaustion (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002). Emotional exhaustion, the primary component of burnout, refers to an individual's feelings of being emotionally exhausted and depleted of emotional resources (Parker & Salmela-Aro, 2011; Salmela-Aro et al., 2009) and is considered as an erosion of life satisfaction (Hakanen & Schaufeli, 2012). Therefore, we use emotional exhaustion as the second indicator to assess university students' quality of life.

In the present study, we propose that social support is an important factor to promote university students' academic achievement and mitigate their emotional exhaustion. Social support refers to the social and psychological support an individual receives or perceives in her or his environment (Lin, 1986), such as respect, care, and help. Received social support is defined as the existence and reception of support, while perceived social support is defined as the perception and availability of support (Hefner & Eisenberg, 2009; Helgeson, 1993). A large literature has demonstrated that perceived social support is more predictive and functional than received social support (Cohen & Wills, 1985; Helgeson, 1993). Therefore, this study focuses on perceived social support.

1.1 Social support and academic achievement

The ecological opinion posits that students are significantly influenced by their surrounding social contexts (Bronfenbrenner, 1986). This opinion offers an approach to understanding the relationship between social support and students' learning outcomes (Dennis, Phinney, & Chuateco, 2005). Social support provides university students with a sense of security and competence, which, in turn, helps them to address intellectual challenges more efficiently (Sarason, Sarason, & Pierce, 1990). According to social capital theory, embedded resources in social networks benefit individuals in achieving various goals (Brouwer, Jansen, Flache, & Hofman, 2016). Those with stronger social support are better embedded in a supportive network and are more socially integrated in their university academic environments, thus they are better positioned to improve their academic achievements (Rayle & Chung, 2007). Several studies have found that students with higher perceived social support reported better attendance (Rosenfeld, Richman, & Bowen, 1998) and university adjustments (Rueger, Malecki, & Demaray, 2008, 2010). A one-year longitudinal study conducted by DeBerard and colleagues (2004) has shown that social support is a significant factor to predict university students' academic achievement. Robbins and colleagues (2004) have confirmed the positive relationship between social support and university students' grade point average (GPA) by meta-analyzing 109 studies. Therefore, we suggest that social support is positively related to academic achievement.

1.2 Social support and emotional exhaustion

According to the general benefits (GB) model of social support proposed by Rueger and colleagues (2016), social support can improve individuals' positive psychological states, such as positive affect (Cohen & Wills, 1985) and sense of well-being (Diener, Suh, Lucas, & Smith, 1999). Meanwhile, Rueger and colleagues (2016) have proposed the stress-buffering (SB) model of social support, which posits that social support acts as a buffer against stress (Cohen & Wills, 1985; Zimet, Dahlem, Zimet, & Farley, 1988). In addition, a cross-cultural study conducted by Taylor and colleagues (2007) has reported that both Asians (including Asian Americans) and European Americans use social support to cope with stress in culturally appropriate ways. Social support can provide solutions for individuals facing stressful problems, reduce the perceived importance of problems, or facilitate positive psychological reactions and behavioral responses (Cohen & Wills, 1985). In other words, social support is regarded as a protective resource that enables people to cope with stress, distress, and depression (Chou, 2000; Zimet et al., 1988). Individuals might suffer more deleterious effects of stress if social support is deficient (Rueger et al., 2016). Furthermore, social support provides individuals with positive social contacts with others, which contributes to emotional balance and reduced burnout (Boren, 2013). Thus, students with supportive resources are less vulnerable to emotional exhaustion than their counterparts without such resources (Heaphy & Dutton, 2008; Uchida & Yamasaki, 2008). In conclusion, social support serves as an effective remedy to improve students' stress resilience, which may be particularly helpful in contending with emotional exhaustion (Jacobs & Dodd, 2003). Therefore, we suggest that social support is negatively related to students' emotional exhaustion.

1.3 Social support, self-esteem, academic achievement, and emotional exhaustion

We propose that social support enhances students' self-esteem, which, in turn, promotes their academic achievement and relieves their emotional exhaustion. Self-esteem is an overall appraisal of oneself, which reflects the attitudes one holds toward herself or himself (Leary & MacDonald, 2003). The relationship between social support and self-esteem has been well documented (Dumont & Provost, 1999; Hoffman, Ushpiz, & Levy-Shiff, 1988). For example, Harter (1993) argued that social support positively influences the development of self-esteem especially during adolescence. Moreover, a cross-cultural research conducted by Goodwin and Plaza (2000), with a sample of 72 British and 68 Spanish individuals, found that social support is positively related to self-esteem in both individualist and collectivist cultures. According to the GB model, social support increases individuals' perception of their own value and self-worth (Cohen & Wills, 1985; Rueger et al., 2016). Individuals with high levels of social support tend to possess higher self-esteem (Rueger et al., 2010). In contrast, lack of support from social relations makes individuals feel devalued and rejected (Leary, 1999), leading to negative self-evaluations and resulting in low self-esteem. Thus, we suggest that social support is positively related to self-esteem.

High self-esteem reflects individuals' positive evaluations of their self-worth and competence (Matthews, Deary, & Whiteman, 2003) and is beneficial for personal development. In a type of self-fulfilling prophecy, students will study harder if they believe they can achieve (Wong, Wiest, & Cusick, 2002). In other words, students' self-esteem can act as a motivator to achieve their academic goals (Fang, 2016). Moreover, students with higher levels of self-esteem might have higher aspirations and goals. They may have more confidence in tackling difficulties and be less likely to surrender to feelings of self-doubt (Baumeister, Campbell, Krueger, & Vohs, 2003). Accordingly, they are more likely to get good grades (Bankston & Zhou, 2002; Schmidt & Padilla, 2003). Hansford and Hattie (1982) conducted a meta-analysis of 128 studies consisting of more than 200,000 participants and reported that self-esteem accounts for 4%~7% of the variance in academic achievement. According to expectancy-value theory, self-evaluation of competence and capacity significantly predict students' education-related attainments and outcomes (Fang, 2016). Social support can promote students' appraisals of self-worth and appreciation of their own capacity (Cohen & Wills, 1985), which in turn helps them perform better in academic contexts (Fang, 2016; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). Therefore, we expect that social support improves students' academic achievement by enhancing their self-esteem.

Self-esteem not only facilitates students' academic performance but also influences their emotional states (Baumeister et al., 2003). Several studies have revealed that self-esteem is negatively related to stress, loneliness, and depression (Dumont & Provost, 1999; Leary, 1999). Students with high self-esteem are less affected by stressors because they are confident in their ability to control their environment and to overcome challenges (Dumont & Provost, 1999). In contrast, those with low self-esteem suffer more stresses and experience poorer mental and physical health (Leary, 1999). In addition, some studies have

also shown that self-esteem is negatively related to all three dimensions of burnout (Janssen, Schaufeli, & Houkes, 1999), because it keeps people away from high-risk circumstances that accompany the symptoms of burnout (Schaufeli & Enzmann, 1998). Further, according to the GB model, social support promotes individuals' perception of their own value and self-worth (Cohen & Wills, 1985; Rueger et al., 2016), which, in turn, helps to ameliorate their emotional exhaustion (Luo, Wang, Zhang, Chen, & Quan, 2016). In contrast, lack of social support may lead to low self-esteem (Leary, 1999), which may make people doubt their capabilities, be afraid of failure, and be prone to encounter setbacks, leading them to eventually develop emotional exhaustion (Orth, Robins, Trzesniewski, Maes, & Schmitt, 2009). Therefore, we expect that social support mitigates students' emotional exhaustion by enhancing their self-esteem.

1.4 Hypotheses

The aim of this study is to examine the underlying mechanism through which social support influences students' academic achievement and emotional exhaustion. Based on the above review of existing literature, we propose that (1) social support is positively related to self-esteem; (2) self-esteem is positively related to academic achievement; (3) self-esteem is negatively related to emotional exhaustion; and (4) self-esteem mediates the relationships between both (a) social support and academic achievement and (b) social support and emotional exhaustion.

2 Method

2.1 Participants and procedures

Participants were undergraduates from a national university in East China. We collected data from the school of management for three reasons. First, collecting data from multiple schools may rule in exogenous variables due to differences across the schools. Second, the school of management, which has approximately 2,000 undergraduate students, is the biggest school in the university. Students in the school of management are from 32 provinces of China. Therefore, participants drawn from this sample pool have significant demographic diversity. The third reason is convenience as the authors are from the school of management. Before this study, we obtained ethical approval from the school. All procedures were in accordance with the 1964 declaration of Helsinki and its later amendments or comparable ethical standards. Our survey was conducted in June 2016. We collected data using a snowball sampling approach through social network sites. We posted our questionnaires via Sojump (http://www.sojump.com), which is widely used in behavioral and psychological studies (e.g., Peng & Xie, 2016). Five research assistants initiated sampling through their personal contacts, who were asked to distribute the survey link to encourage further participation from the same school. All the participants were promised small monetary incentives for their completion of the survey. We attached a cover letter to ensure that their participation was anonymous and that it would only be used for research purposes. This sampling strategy has been demonstrated to be reliable and effective and has been widely applied in data collection (Madrid & Patterson, 2016; Meyerson & Tryon, 2003).

Participants voluntarily answered the questionnaires, which measured their social support, self-esteem, academic achievement, and emotional exhaustion. The questionnaires took approximately 10 minutes to complete. We excluded 32 participants who were from other schools within the same university or from other universities. Moreover, we excluded one participant who indicated that she was not a freshman, sophomore, junior, or senior. The above exclusions resulted in a sample size of 262. The respondents included 108 males and 154 females. They ranged from 17 to 23 years of age, with an average age of 19.25 years (SD = 1.07). One hundred and sixty-five participants were freshmen, eighty were sophomores, sixteen were juniors, and only one participant was a senior.

2.2 Measures

Because all the scales used in this study were originally developed in English, we translated all of them into Chinese following back-translation procedures (Brislin, Lonner, & Thorndike, 1973). According to the guidelines of Beaton and colleagues (2002), we performed an Expert Committee procedure to ensure accuracy and clarity. After reviewing the translations, the Committee, consisting of a methodologist, a psychology professional, and a language professional, did not find any significant discrepancies between the Chinese and the original English versions of the scales.

2.2.1 Social support

We administered the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988), which comprises 12 items, to measure participants' social support across three dimensions: family, friends, and significant others. Sample items include "I get the emotional help and support I need from my family", "My friends really try to help me", and "I have a special person who is a real source of comfort to me". All items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). This scale has good reliability and validity in the Chinese context (Chou, 2000; Kong, Zhao, & You, 2012). In this study, we averaged all 12 items to form a single-scale score of social support. The Cronbach's alpha was .93.

2.2.2 Self-esteem

Self-esteem was measured using the Rosenberg Self-esteem Scale (RSES; Rosenberg, 1965), which consists of 10 statements designed to assess one's global self-esteem. Sample items include, "On the whole, I am satisfied with myself" and "I am able to do things as well as most other people". Participants were asked to rate these items on a 7-point Likert scale, with 1 = strongly disagree to 7 = strongly agree. This scale has good reliability and validity in the Chinese context (Fang, 2016). We computed the mean value of responses on all 10 items to obtain the self-esteem score. The Cronbach's alpha was .85.

2.2.3 Academic achievement

We asked the university students to report their GPAs that showed in the university system. The GPA, which is computed based on all previous grades of all previous classes at the university, is rated ranging from 0 to 4. Prior research has shown that students' students' self-reported GPAs are highly correlated with the official records of their GPAs (r

= .84 and .92; Gray & Watson, 2002), thus accurately reflecting their academic achievement (Lee, Jones, & Day, 2017). In the present study, participants' GPAs ranged from 1.1 to 4.0. Higher GPA indicates better academic achievement.

2.2.4 Emotional exhaustion

We measured participants' emotional exhaustion using the 5-item exhaustion subscale from The Maslach Burnout Inventory—Student Survey (MBI-SS, Schaufeli et al., 2002). Participants were asked to rate a sample question, such as "I feel emotionally drained by my studies," on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). This scale has good reliability and validity in the Chinese context (Hu & Schaufeli, 2009). We computed the mean value of their responses on the 5 items to form emotional exhaustion score. The Cronbach's alpha coefficient was .88.

2.2.5 Control variables

To minimize the effects of exogenous variables, we included several control variables in our analyses. These controls consisted of participants' demographic information, including gender, age, and grade.

2.3 Data analytic plan

Sojump generally requires respondents to answer all the questions on each page. If they do not do so, they will not be allowed to proceed to the next page. As a result, we do not need to handle missing data in the present study (Peng & Xie, 2016). In addition, we examined the normality and outliers for the data, and no concerning outliers were present.

To examine our hypotheses, we first calculated descriptive statistics for all measures. Next, we examined correlations among all variables. Then, we performed path analysis using R to examine the hypothesized relationships among our variables. Several model fit indices were offered to evaluate the appropriateness of our hypothesized model, such as chi-square (χ^2) with its degree of freedom (*df*), Comparative Fit Index (CFI), Normed Fit Index (NFI), and Standardized Root Mean Square Residual (SRMR). The goodness-of-fit of the estimated models are evaluated based on the following criteria: chi-square to degrees of freedom ratio ($\chi 2/df$) lower than 5, Comparative Fit Index (CFI) higher than .90, Normed Fit Index (NFI) higher than .90, and Standardized Root Mean Square Residual (SRMR) lower than .08 (Browne & Cudeck, 1993; Kline, 2011). Moreover, we interpreted the magnitudes of the standardized path coefficients according to the prior literature (Bond & Bunce, 2003; Cohen, 1988). Specifically, coefficients of .10, .30, and .50 mean small, medium, and large effects, respectively.

3 Results

3.1 Descriptive statistics and correlations

Table 1 presents the descriptive statistics and correlations among social support, self-esteem, academic achievement, and emotional exhaustion. Social support was positively related to self-esteem ($r = .47$, $p < .01$) and academic achievement ($r = .13$, $p < .05$), and was negatively related to emotional exhaustion ($r = -.22$, $p < .01$). Additionally, the correlation

between self-esteem and academic achievement was positive ($r = .17$, $p < .01$), whereas the correlation between self-esteem and emotional exhaustion was negative ($r = -.34$, $p < .01$). Furthermore, students' emotional exhaustion was negatively related to their academic achievement ($r = -.33$, $p < .01$). These relationships have offered the statistic foundation to examine our hypothesized mediating model.

[Table 1 here]

3.2 Path analysis

Path analysis was performed using the "lavaan" package in R (Rosseel, 2012) to examine the hypothesized relationships among social support, self-esteem, academic achievement, and emotional exhaustion. According to the principles illustrated in the section of *2.3 Data analytic plan*, the hypothesized model showed good fit to the data ($\chi^2 = 13.03$, $df = 5$, CFI = .95, NFI = .92, SRMR = .05). Figure 1 delineates the path coefficients of the proposed model. Specifically, the path from social support to self-esteem was significant ($\beta = .47$, $p < .01$), so Hypothesis 1 was supported. The paths from self-esteem to both academic achievement ($\beta = .18$, $p < .01$) and emotional exhaustion ($\beta = -.31$, $p < .01$) were significant, supporting Hypotheses 2 and 3. Thus, the mediating effects of self-esteem presented in Hypothesis 4 were validated. In addition, according to the interpretation of standardized path coefficient (Bond & Bunce, 2003; Cohen, 1988), the coefficients from social support to self-esteem and from self-esteem to emotional exhaustion were medium, and the coefficient from self-esteem to academic achievement was small. As for control variables, our results showed that the paths from gender to academic achievement ($\beta = .19$, $p < .01$) and from grade to emotional exhaustion ($\beta = .23$, $p < .01$) were significant. The paths from age to academic achievement ($\beta = -.02$, n.s.), from grade to academic achievement ($\beta = .01$, n.s.), from gender to emotional exhaustion ($\beta = -.10$, n.s.), and from age to emotional exhaustion ($\beta = -.06$, n.s.) were non-significant.

[Figure 1 here]

To further examine Hypothesis 4, the mediating effects of self-esteem in the hypothesized model were tested for significance using the boot-strapping approach (1,000 replications). The boot-strapping procedure enhances the statistical power of mediation analysis, especially for a small or moderate sample size (Preacher & Hayes, 2008). As shown in Table 2, the direct effects of social support on self-esteem – and of self-esteem on both academic achievement and emotional exhaustion – were all significant. Moreover, the indirect effects of social support on academic achievement and emotional exhaustion via self-esteem were significant. Therefore, all the hypotheses were supported.

[Table 2 here]

4. Discussion

The current study sheds light on the relationship between social support and university students' quality of life. Specifically, we investigated the mediating role of self-esteem in the relationship between social support and academic achievement as well as between social support and emotional exhaustion. We employed a questionnaire survey using a sample of 262 university students in China to examine our hypotheses. As we predicted, correlation analyses showed that students with high perceived social support tend to have higher self-esteem, which is consistent with prior literature that has asserted the positive relationship between social support and self-esteem (Goodwin & Plaza, 2000; Hoffman et al., 1988). In conjunction with previous studies, our results also revealed that self-esteem was positively related to academic achievement (Baumeister et al., 2003; Hansford & Hattie, 1982; Pyszczynski et al., 2004) and negatively related to emotional exhaustion (Luo et al., 2016; Orth et al., 2009). In addition, we found that university students' emotional exhaustion was negatively related to their academic achievement (McCarthy, Pretty, & Catano, 1990). Further, path analysis demonstrated that self-esteem fully mediated the correlations between both (a) social support and academic achievement and (b) social support and emotional exhaustion. Our findings thus indicated that university students with high social support are inclined to possess high levels of self-esteem (Dumont & Provost, 1999), which in turn facilitates their academic achievement (Schmidt & Padilla, 2003; Wong et al., 2002) and shields them from emotional exhaustion (Janssen et al., 1999; Luo et al., 2016; Orth et al., 2009). These findings correspond to the GB model and the SB model proposed by Rueger and colleagues (2016). Moreover, we have found that girls score higher than boys, which is consistent with previous studies (e.g., Mackinnon, 2012). Another interesting finding is that students in senior years are more likely to suffer from emotional exhaustion. It may because they are under more pressure, such as pressure of job searching.

4.1 Theoretical and practical implications

This study contributes to the literature in the following ways. First, our findings extend the understanding of social support within the university context. Although prior studies have investigated the role that social support plays in people's lives (Diener et al., 1999; Heintzelman & Bacon, 2015), the influence of social support on university students' lives is relatively underexplored. Our findings indicate that social support contributes to university students' quality of life, both physically and mentally. Furthermore, the current research elaborated the mechanism underlying the relationships between social support and university students' academic achievement as well as their emotional exhaustion. In particular, this study enriches the literature by demonstrating the mediating role of self-esteem. Thus, our study provides a more fine-grained framework to illustrate how social support affects university students' quality of life.

The current research offers practical implications as well. It can provide guidance on how to improve university students' quality of life by promoting their academic achievement and alleviating their emotional exhaustion. Our findings suggest that social support can help to enhance students' self-esteem and thus help them obtain better academic achievement and protect them from emotional exhaustion, which indicates that fostering

supportive environments should be useful in promoting university students' quality of life. Above all, it is vital to be aware of the critical role that social support plays in university students' lives, both for the students themselves and for the people around them. Then, providing social support for university students is also important, especially for students who have low grades or are struggling with emotional exhaustion. For example, providing empathy, company, and comfort for them when they are in bad mood; providing guidance, advice, and assistance for them when they encounter setbacks; providing love, trust and encouragement for them when they doubt their capability and competence. Moreover, social activities and group work can help to foster a supportive environment for university students (Baldwin, Bedell, & Johnson, 1997). As for university students themselves, they should be brave enough to actively seek social support from others, and they should understand how to utilize such support effectively. In addition, for students with low self-esteem, their self-evaluation of their worth and competence could be promoted by increasing their social support (Harter, 1993), which in turn helps to improve their academic achievement (Bankston & Zhou, 2002) and mitigate their emotional exhaustion (Janssen et al., 1999; Orth et al., 2009), thus contributing to promoting their quality of life (Hakanen & Schaufeli, 2012; Lepp et al., 2014).

4.2 Limitations and directions for future research

The current study has several limitations that warrant further investigation. First, this study adopted a cross-sectional design, which leads to limited causal relationships among our variables. Therefore, a longitudinal or experimental design should be adopted in the future to facilitate robust analysis of causal relationships among social support, university students' academic achievement, and emotional exhaustion. Second, the data collection in the current study was performed only through self-reported measures, which might pose a threat to our internal validity because self-report biases (e.g., social desirability) are unavoidable. Thus, future research should use multiple and different methods of assessment (e.g., parents' or peers' reports) to reduce the effects of subjectivity. Third, we adopted the convenience sampling strategy to collect data. The sample of the current study was only drawn from one Chinese university, limiting the generalizability of the findings. It would be helpful for future studies to replicate this research in other cultures to improve the generalizability of the current results. Finally, the MSPSS, used in the current study, is actually a general measurement. Perhaps it is reasonable to use a specific measurement given the school context. However, turning to the work by Bahar (2010), MSPSS has also been used to measure perceived social support in an academic setting. Moreover, in Robbins et al.'s (2004) meta-analysis, they reviewed both general and academic social support, but they did not differentiate their effects on college outcomes, indicating that general and academic social support play similar roles in predicting college outcomes. In the present study, we followed Bahar (2010) and used a general measurement. We aim to investigate the factors that influence academic achievement and emotional exhaustion. Theoretically speaking, both academic and other forms of social support can contribute to both outcomes. For instance, when a student does not do well on an exam, encouraging words from parents can restore confidence and be as helpful as direct academic support. Consequently, simply ruling in perceived academic social support might fail to capture the complete picture of

how social support affects academic achievement and emotional exhaustion.

Despite these limitations, the current study makes several significant contributions. It investigates how perceived social support correlates with university students' quality of life by considering academic achievement and emotional exhaustion as crucial indicators, and it provides an empirical framework for further investigation by examining the mediating effect of self-esteem on the relationship between social support and university students' academic achievement and emotional exhaustion. These findings have thus extended the understanding of social support in university settings and provided valuable recommendations to improve university students' quality of life.

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Table 1

Descriptive statistics and correlations of all study variables

	Mean	*SD*	1	2	3	4	5	6	7
1. Social support	5.29	1.09	--						
2. Self-esteem	5.03	.85	.47**	--					
3. Academic achievement	3.24	.54	.13*	.17**	--				
4. Emotional exhaustion	3.84	1.42	−.22**	−.34**	−.33**	--			
5. Gender	.59	.49	.16**	−.05	.19**	−.08	--		
6. Age	19.25	1.04	−.09	−.15*	−.05	.14*	−.06	--	
7. Grade	1.44	.63	−.19**	−.22**	−.05	.25**	.01	.63**	--

Notes. $N = 262$.

Gender: 0 = male, 1 = female.

Grade: 1 = freshman, 2 = sophomore, 3 = junior, 4 = senior.

* $p < .05$. ** $p < .01$.

Table 2

The direct and indirect effects of social support on academic achievement and emotional exhaustion and 95% confidence intervals

	Estimated effect (SE)	95% CI [a]
Direct effects		
Social support → Self-esteem	.47** (.05)	[.28, .44]
Self-esteem → Academic achievement	.18** (.06)	[.04, .19]
Self-esteem → Emotional exhaustion	−.31** (.06)	[−.72, −.33]
Gender → Academic achievement	.19** (.06)	[.08, .34]
Gender → Emotional exhaustion	−.10 (.06)	[−.61, .04]
Age → Academic achievement	−.02 (.08)	[−.09, .07]
Age → Emotional exhaustion	−.06 (.07)	[−.28, .11]
Grade → Academic achievement	.01 (.08)	[−.13, .14]
Grade → Emotional exhaustion	.23** (.07)	[.18, .84]
Indirect effects		
Social support → Self-esteem → Academic achievement	.08** (.03)	[.01, .07]
Social support → Self-esteem → Emotional exhaustion	−.14** (.03)	[−.27, −.11]

Notes. $N = 262$.

[a] CI = confidence interval (1000 bootstrap samples).

** $p < .01$.

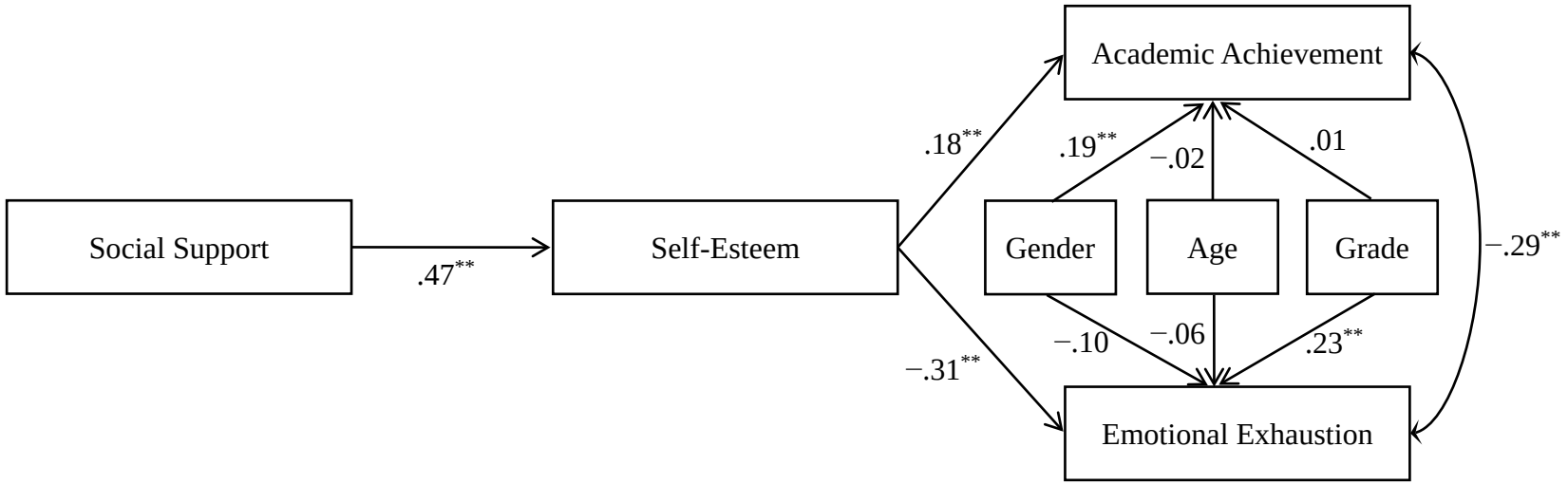

Figure 1 Path coefficients of the hypothesized model.

Notes: $N = 262$.

Standardized path coefficients are reported here.

** $p < .01$.