

# The Correlation of Self-Compassion and Benefits of Empathy with Academic Well-Being in High School Students: The Mediating Role of Academic Buoyancy

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## Abstract

**Background:** Focusing on the health and wellness within educational settings is essential, as it plays a vital role in measuring the effectiveness of educational processes. Given the correlation between self-compassion and benefits of empathy on academic well-being, the present study investigated the mediating role of academic buoyancy in high school students.

**Methods:** Using a descriptive-correlational approach, structural equation modeling (SEM) was employed to analyze the interplay between variables. Through multistage cluster sampling method, 384 high school students were selected between February and April 2023 in Ahvaz, Iran. The participants were asked to fill out School Related Well-Being Scale (SWBS), Self-Compassion Scale (SCS), Empathy Assessment Scale (EAS), and Academic Buoyancy Scale (ABS). The proposed model was evaluated using SEM. Statistical analysis was performed using SPSS Amos version 25.

**Results:** Significant positive correlations were found between self-compassion and academic well-being ( $r=0.22$ ,  $P=0.008$ ), as well as between self-compassion and academic buoyancy ( $r=0.37$ ,  $P=0.001$ ). A positive correlation was also observed between the benefits of empathy and academic buoyancy ( $r=0.36$ ,  $P=0.001$ ). Furthermore, a significant positive correlation existed between academic buoyancy and academic well-being ( $r=0.59$ ,  $P=0.001$ ), along with significant indirect paths through academic buoyancy to academic well-being ( $P=0.010$ ).

**Conclusions:** The study findings supported the goodness of fit of the proposed model, suggesting its potential utility in developing interventions to enhance students' academic well-being.

**Keywords:** Self-compassion, Empathy, Health, Resilience, Students

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## 1. Introduction

High school, as one of the most important and sensitive life periods for students, affects their personal and social lives (1). Due to the biological, social, and psychological conditions of high school students, which cover a wide range from adolescence to the world of youth, there are commonalities and distinctions between high school years and other periods of education (2). During high school years, most of the special talents of the majority of teenagers and youths emerge, learning power reaches its peak, and curiosity finds a specific focus. Furthermore, minds will be preoccupied with new life issues such as selecting a field of study or a job, managing a family, and gravitating towards different persuasions and ideologies. High school students also find the ability to understand social, economic, and spiritual values during this period (3). Therefore, high school is of special

importance in all education systems because it can underlie academic excellence and the development of knowledge and skills in the following levels of education, improve educational standards both at the individual and social levels, and help students establish constructive relationships with the members of their family, which is the most important pillar of society (4).

A large number of education researchers have recently shown their interest in a new concept called "academic well-being", which is referred to as a new tool for academic progress (5, 6). Recent studies have demonstrated the correlation between well-being and academic progress (7, 8). The concept of academic well-being was introduced to the field of education to highlight the central role that each learner's unique educational environment plays in their lives as well as the significance of academic progress for their social and emotional

development (9). Accordingly, it makes sense to address well-being in educational domains because it is regarded as a crucial measure of educational processes (10). Therefore, this study aimed to investigate the factors influencing the academic well-being of students. There are generally challenging questions in the field of education; finding an answer to these questions requires an investigation into the effects of various factors on the academic well-being of students.

Given its importance in high school students, it is necessary to investigate the factors affecting academic well-being. One of these factors is self-compassion. Every human being encounters situations in daily life that cause him/her to experience feelings of failure, defectiveness, and inadequacy (11). Emotions such as rage and hostility are sparked by these experiences and self-assessment. Anger and violence can sometimes be self-conscious feelings resulted from self-reflection and a negative self-evaluation. Self-evaluation can occur implicitly, explicitly, or outside our awareness. By fostering self-compassion, individuals can cultivate a mindful approach to their emotions, embracing difficult feelings with kindness, understanding, and a sense of shared humanity (12). As a result, unpleasant emotions change into more positive ones, providing us with an opportunity to understand the circumstances better, and select effective actions in order to change ourselves. Self-compassion is a new psychological concept, which somehow replaces the concept of self-worth (13, 14). In this regard, Mohammadi and colleagues (15) showed that the academic well-being of students had a significant correlation with a sense of coherence, self-compassion, and responsibility. In another study, Khodapanah and Tamnaei far (16) also investigated the correlation between academic well-being and self-compassion in male students and reported that self-compassion could predict their academic well-being.

The benefit of empathy is another factor related to academic well-being. Empathy is defined as the emotional ability to experience other peoples' emotions or as the cognitive ability to understand their emotions (17). The ability to identify and respond to the mental states of others is another definition of empathy. This capacity is innate and gradually develops from birth and childhood to adolescence (18). Empathy is one of the important characteristics of human interpersonal behavior,

and is necessary for effective social communication (19). Empathy allows individuals to understand the beliefs and opinions of others, predict, and properly respond to their behaviors (20).

Academic buoyancy is another factor that can increase students' academic well-being by affecting their self-compassion and benefit of empathy. Academic buoyancy is defined as a dynamic process through which people exhibit positive adaptive behavior when facing adversities and emotional traumas during their education (21). Academic buoyancy is a two-dimensional structure that includes both adversities and achievement of positive adaptive outcomes. Adversities here refer to risks related to negative conditions such as frustration, poverty, and life crises (22). Academic buoyancy serves as a foundational element in fostering positive relationships between students and their academic environment, achieved through cognitive growth, positive emotional and behavioral attitudes towards schooling, positive self-perception, and metacognitive processes (23). Academic buoyancy, in its broader sense, refers to students' ability to overcome problems, obstacles, and challenges in their everyday academic lives (24). For example, suppose that some students consistently receive low grades in various courses all through a week, experience pressure from their classmates and families because of these low grades, feel physically weak under the stress of the exams, a lack of motivation to continue taking the exams, and face mistreatment and constant competition from their classmates. Despite these difficult conditions, if they have high levels of academic buoyancy, they can successfully cope with this situation, show adaptive behaviors, experience less burnout, and even engage in a variety of recreational and academic programs to prevent academic burnout (25).

Therefore, we can acknowledge that academic well-being in educational settings points to behaviors by the learners toward learning and making progress in educational settings. Students who have the motivation to learn a subject are ready to engage in activities that will help them to learn. By contrast, students who lack the motivation to learn something do not make systematic efforts to learn, may be negligent and disorganized in class, lack organization, or do not even study or review the materials taught in the class. Given the pivotal role of students in societal progress and the challenges they encounter in educational

environments, it is imperative to devise strategies to address their academic difficulties. Hence, this study sought to explore the mediating influence of academic buoyancy on the correlation between self-compassion, empathy benefits, and academic well-being among high school students.

## 2. Methods

Through a descriptive-correlational approach, structural equation modeling (SEM) was used to examine the associations between the study variables. The study population encompassed all high school students in Ahvaz, Iran, during the academic year 2022-2023. The sample size was based on the number of study variables so that for each variable, 10 students were considered as the study participants. Between February and April 2023, based on multistage cluster sampling, District 3 of Ahvaz Department of Education was randomly selected from among 4 school districts in this city, and then 6 all-girls junior high schools and 6 all-girls senior high schools in this district were randomly selected. From a total of 12 high schools, a random selection was made of 6 schools, followed by the random selection of 2 classes from each school. Subsequently, after obtaining a written consent from school principals and teachers, research questionnaires were administered to students in the selected classes. After eliminating distorted and incomplete questionnaires, 384 students were selected as the study sample. The inclusion criteria were: junior and senior high school students with an age range of 13-18 years, informed consent of students and their parents to participate in the study, and no learning disorders or psychological problems. Participants had to meet specific criteria in order to be included in the study, which required them to provide complete responses to all questions in the questionnaire; otherwise, they were excluded from the study.

### 2.1. Research Tools

**2.1.1. School-Related Well-Being Scale (SWBS):** This 11-item tool was developed by Pietarinen and co-workers (26). The items are scored based on a 5-point Likert scale from 1 to 5. Pietarinen and co-workers (26) reported the validity and reliability (0.75) of this tool to be acceptable. The range of SWBS scores is between 11 and 55. The reliability of the Persian version of the questionnaire has been demonstrated with a

Cronbach's alpha coefficient of 0.78, as reported by Mohammadi and colleagues (27), and the validity of the scale was evaluated as acceptable (CVI=0.98, CVR=0.95).

**2.1.2. Self-Compassion Scale (SCS):** This 12-item scale was developed by Raes and colleagues (28). A 5-point Likert scale (ranging from 1 for strongly disagree to 5 for strongly agree) was used to assess responses. The total score on this scale falls within the range of 12 to 60, with elevated scores indicating increased levels of self-compassion. Shahbazi and co-workers (29) established the reliability of the Persian version, reporting a Cronbach's alpha coefficient of 0.91. Additionally, the authors (29) determined a Content Validity Index (CVI) of 0.78 and a Content Validity Ratio (CVR) of 0.93 for SCS.

**2.1.3. Empathy Assessment Scale (EAS):** Originally developed by Wang and co-workers (30), the tool comprises 15 items distributed across three subscales: cognitive empathy, emotional reactivity, and social skills, each containing 5 items. Responses to items are recorded on a 5-point Likert scale (ranging from strongly disagree to strongly agree). EAS yields scores ranging from 15 to 75, with the authors (31) attesting to its reliability at 0.83. The validity of the scale was substantiated by a CVI of 0.89 and CVR of 0.92 (32).

**2.1.4. Academic Buoyancy Scale (ABS):** A 6-item scale devised by Martin and Marsh (33) employs a 5-point Likert scale (5 for strongly agree, 4 for somewhat agree, 3 for no comment, 2 for somewhat disagree, and 1 for strongly disagree) to evaluate responses. The total score on this scale varies from 6 to 30, with higher scores denoting increased levels of academic buoyancy. Darabi and colleagues (34) confirmed the reliability of the Persian version, citing a Cronbach's alpha coefficient of 0.87. Furthermore, the content validity of the scale was affirmed with a CVR of 0.96 and a CVI of 0.97 (34).

### 2.2. Data Analysis

Skewness and kurtosis were used to assess the normality of data distribution. The Pearson correlation coefficient was employed to explore the relationship between variables, while Structural Equation Modeling (SEM) was applied to assess the proposed model using SPSS Amos version 25.

### 3. Results

The analysis of demographic data revealed that the mean age of participants was 16.19±2.66 years. Among the participants, 48.70% (n=187) were junior high school students, and 51.30% (n=197) were senior high school students. Table 1 provides mean±standard deviation, skewness, kurtosis, and correlation coefficients for the study variables. The normality of data distribution was confirmed through skewness and kurtosis assessments. Significant correlations were observed among all research variables as indicated by Pearson correlation coefficients. Figure 1 illustrates the initial model proposed to elucidate academic well-being based on self-compassion, empathy benefits, and academic buoyancy.

Since the root mean square error of approximation (RMSEA) was 0.089, the initial model needed to be modified. Therefore, the path from the benefit of empathy to academic well-being was excluded from the model. Given that RMSEA of the final model was 0.054, the model can be

considered as well-fitted to the data (Table 2). The final model is shown in Figure 2.

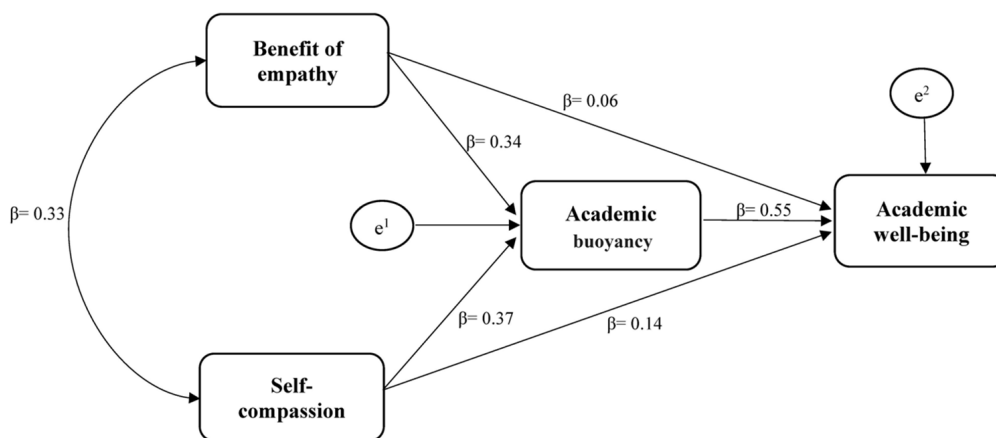
Table 3 presents the results of estimating path coefficients for direct and indirect correlation. There was a significant correlation between self-compassion with academic well-being (P=0.008) and academic buoyancy (P=0.001). There was a positive correlation between the benefits of empathy and academic buoyancy (P=0.001). Moreover, there was a significant correlation between academic buoyancy and academic well-being (P=0.001). The results showed that there was no significant correlation between the benefits of empathy and academic well-being in high school students.

The findings indicated a significant indirect pathway from self-compassion to academic well-being, mediated by academic buoyancy (P=0.010). Furthermore, the indirect path from empathy benefits to academic well-being was also significant, with academic buoyancy playing a mediating role (P=0.002) (Table 3).

**Table 1:** Mean, Standard Deviation (SD), and Pearson correlation coefficients of the variables

Variables	Mean±SD	1	2	3	4	Skewness	Kurtosis
1- Academic well-being	31.68±10.28	1				-0.58	-0.96
2- Self-compassion	51.65±12.58	0.22*	1			0.48	-1.160
3- Benefit of empathy	44.75±8.56	0.26*	0.26*	1		0.23	-0.98
4- Academic buoyancy	15.00±6.11	0.59**	0.37**	0.36**	1	-0.34	-0.84

\*\*P <0.01; \*P<0.05



**Figure 1:** The figure shows the initial model in standard mode.

**Table 2:** Fit indicators of the initial and final models

Fit indicators	$\chi^2$	df	( $\chi^2/df$ )	TLI	CFI	RFI	NFI	RMSEA
Initial model	135.91	40	3.39	0.92	0.94	0.89	0.92	0.089
Final model	83.13	39	2.13	0.96	0.97	0.93	0.95	0.054

TLI: Tucker-Lewis Coefficient; CFI: Comparative Fit Index; RFI: Relative Fit Index; NFI: Normed Fit Index; RMSEA: Root Mean Square Error of Approximation

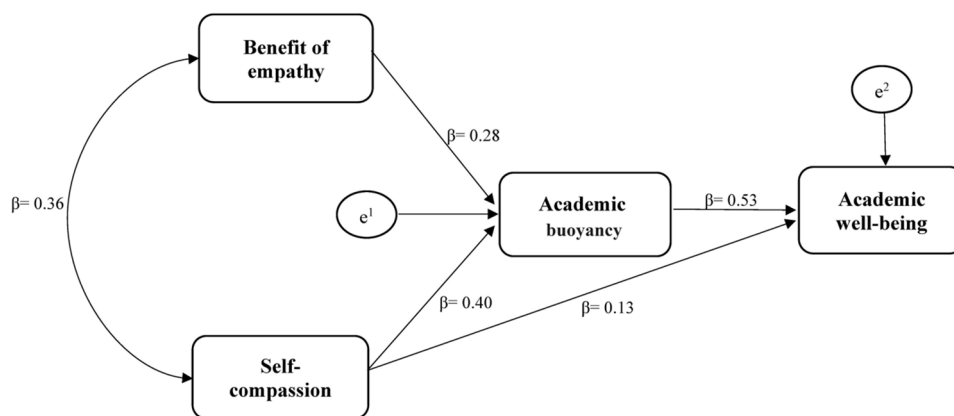


Figure 2: The figure shows the final model in standard mode.

Table 3: Direct and indirect paths in the final model

Paths	Final model	
	β	P
Self-compassion → Academic well-being	0.13	0.008
Benefit of empathy → Academic well-being	0.06	0.213
Self-compassion → Academic buoyancy	0.40	0.001
Benefit of empathy → Academic buoyancy	0.28	0.001
Academic buoyancy → Academic well-being	0.53	0.001
Self-compassion → Academic well-being through academic buoyancy	1.02	0.010
Benefit of empathy → Academic well-being through academic buoyancy	0.97	0.002

#### 4. Discussion

This study aimed to investigate the mediating role of academic buoyancy in the correlation between self-compassion and the benefits of empathy with academic well-being in high school students. The first study finding indicated a significant correlation between self-compassion and academic well-being, which is consistent with the results of previous studies (6, 16). Shirmohammadi and co-workers (6) evaluated the positive and significant correlation between self-compassion and academic well-being in students. In addition, Khodapanah and Tamnaei far (16) showed that there is a correlation between self-compassion and academic well-being in secondary school students. To explain this finding, it can be stated that academic well-being and self-compassion are derived from the theoretical foundations of positive psychology. Concepts such as self-compassion, satisfaction, mindfulness, optimism, hope, and self-efficacy are among the components of this approach, and that is why academic well-being and self-compassion have been introduced to the literature in the field of education. Individuals who judge themselves and exhibit negative emotions such as anger and anxiety are more prone to academic failure or dropout, which decreases their performance

in all areas of life. In fact, a sense of failure and pessimism towards education lower the academic performance of students (6). It is impossible to pick just happy moments from the array of pleasant and unpleasant events that occur in today's world. However, you can help yourself and others to be less damaged by adversity. Showing compassion, one of the strategies for helping others and yourself, has attracted great interest in recent years. Having a more responsible perspective on one's own life as well as the lives of others is what compassion entails (8). Compassionate behavior greatly improves the mental health of students and reduces their anxiety and depression. Individuals with a compassionate view of their failures and shortcomings experience higher levels of well-being than those who frequently judge themselves (12). Students need to know why self-compassion, self-support, and self-care are as important as the compassion they show to, the support they provide for, and the care they take from one of their friends (13). As a result, it is necessary that they be able to adjust and modify their destructive emotional and affective patterns in a way that they can be healthier, happier, and more efficient, and facilitate comprehensive improvements in the efforts made by the educational groups and positive and constructive use of the results of these efforts.

The results also showed that there was no significant correlation between the benefits of empathy and academic well-being, which is not consistent with the findings of Cho and Jeon (35) who showed that empathy has a positive correlation with psychological well-being. This is because they investigated the correlation between the benefits of empathy and academic well-being based on the Pearson correlation coefficient and regression analysis, whereas this study examined the hypotheses using SEM (35). Pearson correlation coefficients in this study also revealed a significant correlation between these two variables, but all the effects of the benefits of empathy on academic well-being in the research model were explained by the mediating variables (that is, indirect correlation) because of their presence in the model. In other words, in this model the benefits of empathy indirectly affected academic well-being as well. To explain these findings, it can be stated that various ways such as speaking, writing, reporting, drawing curves, painting, and preparing tables, charts, wall newspapers, displays can be employed to focus on organizing the personal emotions of students and developing a positive and constructive procedure for their emotions and their skills in receiving and transferring information and findings (17). Students with effective communication skills can explain to others what they have learned or think in an appropriate and appealing way. In fact, communication is the process of effectively expressing your thoughts to other people. It is possible to communicate and develop positive empathy by employing various methods including the use of oral and written reports, drawings, demonstrations, and diagrams of various types (20). In all these methods, students must gradually learn to use scientific vocabulary in their texts and speech. Attention to the development of empathy skills and the establishment of constructive and positive communication provides students with precious opportunities to establish deep and emotional relationships with their teachers and with one another. All these dimensions together can help to improve the final performance of students. Therefore, all available resources and capacities must be used to improve these dimensions of education. They must also be integrated with scientific and theoretical foundations to allow research on areas of academic well-being and utilization of what the students have been taught (35).

An additional study finding presented a significant association between academic buoyancy and academic well-being, indicating a positive and substantial correlation between these variables, consistent with prior research (36). Collie and colleagues (36) highlighted the connection between academic buoyancy and the academic well-being of female secondary school students. This finding can be elucidated by the notion that academic buoyancy encompasses competencies such as trust, motivation, orientation, communication, and stress management, which serve to safeguard students' personality traits. The benefits of empathy can prepare the ground for enhancing students' approaches to dealing with various situations and their communication skills (24). Accordingly, students who act spontaneously experience an increase in their strength and energy as well as a reduction in fatigue, both of which are prerequisites to academic buoyancy. Empathy-based cognition, and philanthropy and ideation based on this approach, can help students resist, persevere, and make efforts to learn and improve their academic performance (36).

The results revealed that academic buoyancy played a significant mediating role in the relationship between self-compassion and academic well-being. Notably, no comparable studies were identified to contrast their findings with those of the present study. Furthermore, a significant correlation between self-compassion and academic well-being was observed, with the indirect association suggesting that enhancing self-compassion could boost students' academic well-being by bolstering their academic buoyancy. Moreover, there was a significant correlation between the benefits of empathy and academic well-being with the mediation of academic buoyancy. The direct correlation showed that there was no significant correlation between the benefits of empathy and academic well-being. By contrast, the indirect correlation indicated that the benefits of empathy affected the academic well-being of students only after it increased their academic buoyancy. Several factors affect the academic progress and well-being of students, some of which have positive effects and others negative effects. One of the factors that affect the academic well-being and progress of students positively is academic buoyancy. Students who embrace the positive aspects of self-compassion (self-kindness, common

humanity, and mindfulness) and optimism during their academic journey are likely to experience favorable aspects of academic well-being, such as increased school engagement and perceived academic competence. Conversely, students who focus on the negative facets of self-compassion (self-criticism, isolation, and excessive self-identification) during their educational pursuits may encounter adverse aspects of academic well-being, including maladaptive behaviors. One of the sophisticated life skills that anyone can acquire at any age is empathy. There are many definitions of empathy, but most of them include three main elements: (1) effective response to others, which usually requires sharing another person's emotional state, (2) cognitive ability to see the world through the eyes of others, and (3) emotional regulation of students' behavior. Empathy enhancement improves the health of people's individual and social lives, whereas its absence jeopardizes the health of society. For example, students with poor empathy skills may engage in bullying behavior at school, harm other students, and damage the school's facilities under any pretext. Therefore, it can be concluded that academic buoyancy can well mediate the correlation of self-compassion and the benefit of empathy with academic well-being.

#### 4.1. Limitations

Since the study population was restricted to female high school students in Ahvaz, Iran, the results should be cautiously generalized to male students or those of other education levels and cities. Another limitation of this study was the use of self-report measurement tools that may have influenced the answers provided by participants due to social desirability bias. The non-cooperation of students and school principals, as well as the high number of distorted and incomplete questionnaires, were other practical limitations of this study. Future studies are recommended to control the effects of other influential factors such as education level, field of study, and grade point average (GPA) of students.

## 5. Conclusions

The final model proposed in this study was well fitted to the data; therefore, it can be considered a breakthrough that can effectively improve academic well-being. Based on our results, education officials and planners are recommended

to pay special attention to these psychological constructs in the development of textbooks and educational programs. Moreover, education experts and officials are recommended to plan the atmosphere of educational settings in a way to help students take advantage of the positive aspects of their personality and behavior and then increase their academic buoyancy to improve academic well-being. Since the benefits of empathy and academic buoyancy are acquirable and learnable, families and teachers should pay more attention to these variables in order to improve students' academic well-being.

### Ethical Approval

The study was approved by the Ethical Committee of Islamic Azad University- Isfahan (Khorasgan) Branch with the code of IR.IAU.KHUISF.REC.1402.339. Also, written informed consent was obtained from the participants.

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### Authors' Contribution

Leila Fathi: Substantial contributions to the conception and design of the work, and the acquisition, analysis, and interpretation of data for the work, reviewing the work critically for important intellectual content. Saeed Bakhtiarpour: Substantial contributions to the conception and design of the work, and the acquisition, analysis, and interpretation of data for the work, reviewing the work critically for important intellectual content. Ali Mahdad: Substantial contributions to the conception of the work, drafting the work and reviewing it critically for important intellectual content. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work, such as the questions related to the accuracy or integrity of any part of the work.

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**Conflict of interest:** None declared.

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