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RESEARCH

Academic Virtues Shield the Negative Effect of Academic Stress on Positive Mental Health in a Sample of Pakistani University Students

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Abstract

Academic stress has become an ineffaceable part of academic life. Because of its numerous ill-effects, there is a need to devise a mechanism to prevent its adverse influence on students' mental health/psychological well-being. Based on a sample of 742 Pakistani undergraduate students, this research tests the effectiveness of academic virtues for minimizing the negative influence of academic stress on positive mental health. Enriching academic life, academic virtues permit university students to manage their studies, address academic challenges, develop social competence, advance in their field of study, and become career ready. Results indicated that irrespective of gender, age, and academic achievement, undergraduate students who experience academic stress, but apply their academic virtues (justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness) to a greater extent are able to attain higher levels of positive mental health. The theoretical contribution and practical implications of the results are also discussed.

Keywords Academic virtues · Academic stress · Positive mental health · Strengths-based application · Resource caravans · Broaden-and-build theory

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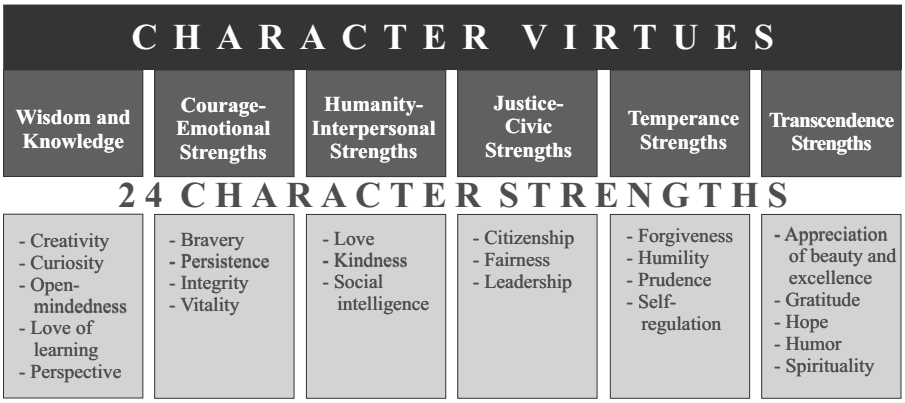
1 Introduction

Often termed as mental well-being, positive mental health denotes the presence of general emotional, psychological, and social well-being (Keyes et al., 2002). Positive mental health is not just the absence of mental illness but reflects a state of well-being that has a positive impact on different activities of life, such as managing the daily stressors; balancing family, work, and academic life; and contributing to community (Keyes, 2005). Individuals with positive mental health possess a positive but realistic view of their self-concept and capabilities, a positive sense of well-being, and a set of personal resources (e.g., self-esteem, resilience, optimism, mastery and sense of coherence) to secure satisfying personal relationships as well as achieve positive outcomes in various aspects of their lives (Ahrnberg et al., 2021; Huppert, 2009). Furthermore, mental health is a key factor that influences academic success. According to Baron (2023), students with positive mental health often exhibit good academic performance, including higher grades, greater focus, improved problem-solving skills, and increased critical and creative thinking. They also actively participate in class, which contributes to meaningful collaborative learning and better social relationships.

In the context of students pursuing higher education, the challenges or stressors that they encounter in their academic journey may adversely influence their adaptation to university life (Mofatteh, 2021; Mthimunye & Daniels, 2019). It is pertinent to note that the pressures or apprehensions emanating from within the academic setting are detrimental to university students' mental health and well-being (Chou et al., 2021; Green et al., 2022). One of the major sources of university students' tensions is academic stress, which is a psychological state caused by academic stressors (e.g., excessive workload, fear of failing, competition with peers, and concerns about future employment) that may exhaust their psychological resources (Bedewy & Gabriel, 2015; Misra et al., 2000). Academic stress has become an integral component of the student experience, with far-reaching implications for both academic success and mental health and well-being. Consequently, it is recommended to adopt proactive approaches to address the challenges posed by academic stress (Barbayannis et al., 2022; Green et al., 2022; Pérez-Jorge et al., 2025; Ross et al., 2024; Shakeel et al., 2022; Suárez-Montes & Díaz-Subieta, 2015; Worsley et al., 2024). Considering the above, this study demonstrates a mechanism for alleviating the influence of university students' academic stress on their mental health. To this end, the study examines the moderating effect of academic virtues on the relationship between academic stress and positive mental health in a sample of Pakistani undergraduate students.

Academic virtues— justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness—are valuable personal resources that foster student development and academic well-being. These aim at enriching academic life to enable university students to attain their academic and vocational goals. Each academic virtue is composed of academic strengths that define it (Green & Karuppannan, 2025a, 2025b). The concepts of academic strengths and virtues have been derived from the Values in Action (VIA) character strengths and virtues (Peterson & Seligman, 2004). The 24 VIA character strengths are organized under the six core virtues as shown in Fig. 1. The 24 academic strengths (representing the use of



Note: This is the original VIA character strengths and virtues model by Peterson and Seligman (2004) in which the 24 strengths are allocated to the six fundamental virtues.

Fig. 1 VIA Classification of Character Strengths and Virtues

VIA character strengths in the academic setting) were assigned to the four academic virtues, which were identified through principal component analysis (cf. Green and Karuppannan, 2025b) as well as exploratory factor analysis and confirmed by confirmatory factor analysis (cf. Green & Karuppannan, 2025a). Please refer to the Instruments section for details about the validity and reliability of the measure assessing academic virtues. Figure 2 presents the 24 academic strengths. Academic virtues are detailed in the section, Role of Academic Virtues in Furthering Positive Outcomes.

Character strengths and virtues are domain-general in nature and can be applied to a wide variety of contexts or situations. As such, these do not represent any life domain (e.g., family, work, study, health, relationships, community, and spirituality). In contrast, academic virtues and strengths are domain-specific in nature representing the study domain or academic setting. Each academic strength is applied to an important area of the academic setting (e.g., area of study, critical thinking, group activities, assessments, university work, academic competencies, and study goals) where it is in all likelihood most naturally or logically applied or manifested. For instance, *creativity* is possibly most naturally demonstrated through the use of innovative ideas to complete university work. In addition, *integrity* is most likely best exercised through honesty in completing exams and quizzes. Furthermore, *self-regulation* is perhaps most naturally practiced to remain disciplined in studies. As such, academic virtues as a newly defined concept make a meaningful contribution to the extant literature.

Character strengths are ubiquitous, morally valued, elevating, and fulfilling personality traits that help individuals attain excellence in life. Each character virtue comprises a set of character strengths that define it. Character virtues are well-recognized as elements contributing to the goodness in human beings (Peterson & Seligman, 2004). Character strengths embodied in the character virtues allow individuals to embrace the positive, endure the mundane, build resilience, develop coping mechanisms, and focus on solutions rather than dwelling on problems (Niemiec, 2020).

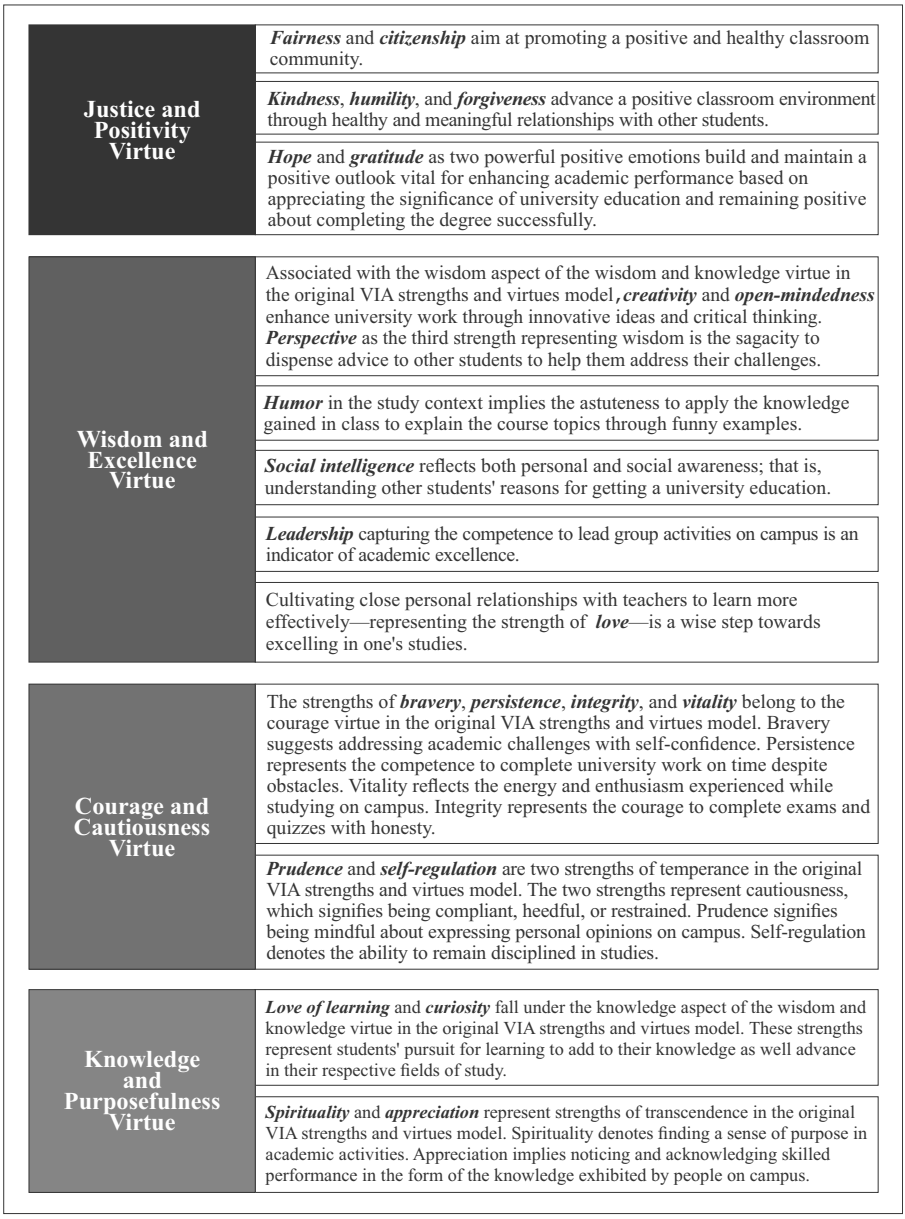


Fig. 2 Structure of the Four Academic Virtues

1.1 Significance of the Study

This study is important on account of four major reasons. First, positive mental health is an important construct that provides an all-encompassing view of mental health and is predictive of both positive and negative indicators of mental health over time

(Margraf et al., 2020). However, positive mental health is an understudied construct that needs to be examined from different perspectives to assess its potential for benefitting individuals (Margraf et al., 2020). The study takes a step towards this direction. It examines positive mental health as the dependent variable in a moderation model. The aim is to demonstrate the role of academic virtues in mitigating the negative influence of academic stress on positive mental health. It is noteworthy that augmenting positive mental health among university students is pertinent because poor or impaired mental health status has been shown to be associated with low academic performance among university students (Zhang et al., 2024). Students with positive mental health are well-equipped to navigate an unpredictable and complex academic landscape, make wise choices, take prudent actions, attain academic excellence, and realize their full potential in life (The Global College, 2022).

Second, the moderation model presented in this study lays a foundation for testing the potential of academic virtues as moderators between different sets of independent and dependent variables to identify possibilities for enriching academic life. Moreover, the current research adds to the sparse research on academic virtues, which have been recently conceptualized.

Third, research based on academic virtues—as domain-specific character virtues—aims to provide greater specificity to the findings. This is possibly because the domain-specific competency or application of an academic strength provides greater insights into how it may influence, relate, or predict the variable of interest. For instance, *persistence* as an academic strength may influence an outcome—such as academic engagement—based on its domain-specific competency or context, which is the determination to complete *university work* on time despite obstacles getting in the way. In the domain-general context, the general competency embodied in persistence (e.g., "I finish things despite obstacles in the way;" Peterson et al., 2005) may also influence academic engagement. However, the domain-specific context provides greater insights into how persistence may influence academic engagement as well as makes the interpretation of findings more meaningful and relatable to the study context. Academic virtues in tandem with other variables germane to the academic setting (e.g., academic stress, academic thriving, and academic engagement) are expected to provide context matching explanatory power to the findings. Such findings are pertinent for devising meaningful strategies for enriching university life (Green & Karuppannan, 2025a, 2025b), such as helping students navigate through personal difficulties, emotional issues, and academic challenges to improve their overall well-being and functioning.

Finally, this research is important because a considerable proportion of the university student population in Pakistan is experiencing academic stress leading to lower levels of academic performance and causing depression, anxiety, helplessness, despair, frustration, anger, insomnia, concentration problems, and headache (Shakeel et al., 2022). Moreover, the majority of research on academic stress from Pakistan focuses on its causes and consequences (e.g., Bashir et al., 2019; Saeed et al., 2020). This research therefore demonstrates a mechanism for reducing academic stress and bolstering positive mental health among university students in Pakistan. It goes without saying that this mechanism is also beneficial for university students abroad, as academic stress is a global concern.

2 Theoretical Framework and Study Constructs

2.1 Positive Mental Health

The term, positive mental health, was coined by Marie Jahoda in 1958. According to her, individuals with positive mental health are self-reliant and are not a burden on others. The components of positive mental health are based on two theoretical perspectives. The first perspective is the *hedonic well-being* focusing on happiness, life satisfaction, and positive emotions (Keyes et al., 2002). The second perspective is the *eudaimonic well-being* dealing with psychological and social functioning as well as self-actualization (Ryan & Deci, 2001). Positive mental health has been shown to be positively related to social support, satisfaction with life, subjective happiness, dispositional optimism, and generalized self-efficacy as well as negatively related to depression, anxiety, and stress among university students (Çeçen & Vatandaşlar, 2021; Lukat et al., 2016).

2.2 Academic Stress

Academic stress is a psychological state caused by the perceived pressures to perform at university, such as unrealistic expectations of faculty and parents, intense competition with peers about grades, a heavy workload of assignments, challenging exam questions, and fear of not doing well (Bedewy & Gabriel, 2015). Academic stress is negatively related to as well as predicts positive mental health (Khan et al., 2022). In addition, academic stress has been shown to be negatively related to mental well-being (Green et al., 2022). Furthermore, academic stress is negatively related to cognitive, affective, and behavioral engagement; academic motivation; academic self-efficacy; and academic satisfaction (Chyu & Chen, 2022; Shehadeh et al., 2020). Furthermore, academic stress stifles motivation, inhibits academic performance, increases dropout rates, and negatively affects flourishing among college students (Bambacus, 2018). Increased levels of stress can significantly impair cognitive functioning, including attention, memory retrieval, and concentration, ultimately leading to difficulties in processing and retaining new information (Goff, 2011; Reeve et al., 2013). Furthermore, because of academic stress, students frequently experience demotivation, anxiety, depression, sleep disturbances, drowsiness, and chronic fatigue (Pérez-Jorge et al., 2025). Studies also indicate that academic stress is associated with such negative psychological consequences as unpleasant emotional states, tearfulness, and even self-harm and suicidal feelings in some instances (e.g., Lotz & Sparfeldt, 2017; Soares & Woods, 2020). As such, academic stress adversely influences students' physical and mental health as well as impedes their academic performance and motivation (Shakeel et al., 2022; Worsley et al., 2024).

2.3 Strengths-Based Approaches

Character strengths and virtues are the driving forces behind the majority of strengths-based approaches. These seek to help individuals achieve self-actualization by encouraging and energizing them to step out of mediocrity to explore opportuni-

ties to grow and evolve as well as actively pursue excellence in their chosen fields (Green, 2024a; Niemiec & Pearce, 2021). Strengths-based practices enable individuals to gain important insights into the significance and scope of character strengths as well as correct misconceptions about them. The predominant aim is to help individuals become cognizant of their personal set of signature or most used strengths. This, in turn, motivates them to use their strengths to attain positive outcomes (Niemiec & Pearce, 2021). With regard to college/university students, strengths-based approaches/interventions have been shown to foster well-being, positive psychological functioning, personal growth, the X-factor, and academic development. These interventions aimed at motivating students to use their strengths to cultivate learning agility, acquire catalytic learning capabilities, develop intellectual reasoning and problem-solving skills, enhance personal insight, build academic self-efficacy, achieve academic excellence, and cultivate optimism (Anderson et al., 2024; Green, 2021, 2022, 2024a).

2.4 Role of Academic Virtues in Furthering Positive Outcomes

Academic virtues are valuable personal resources encompassing self-activating academic strengths that enable university students to manage their studies, address academic challenges, develop social competence, advance in their field of study, adjust to academic life, and engage in career crafting activities (Green & Karruppannan, 2025a). Studies on academic virtues as traits may be crucial for enhancing university guidance and counseling programs in terms of offering insights to promote student well-being and academic success. Additionally, academic strengths and virtues may play a pivotal role in advancing strengths-based approaches for enriching academic life as do character strengths and virtues—discussed above. However, compared to character virtues, initiatives focusing on academic virtues may provide context-specific explanatory power to the findings by connecting the dots within the academic setting. These findings are important as they may highlight unique challenges and needs within the university setting and student populations. It should be noted that understanding the nuances of a particular context allows for the development of targeted strategies that are more likely to resonate with students and address their specific issues. As such, more effective and efficient interventions may be delivered.

Academic virtues are positively related to character virtues, personality traits, proactive personality, core self-evaluations, optimism, career adaptability, academic achievement, and student self-efficacy (Green & Karuppannan, 2025a, 2025b). In addition, they are negatively related to academic burnout (Green and Karuppannan, 2025b). Furthermore, the relationship of academic virtues with PERMA-oriented well-being, satisfaction with life, and positivity (Green & Karuppannan, 2025a, 2025b) suggests that they may in all probability influence positive mental health.

2.5 Stress-Buffering Role of Character/Academic Virtues

Character virtues have been shown to be negatively related to stress (Chou et al., 2021; Zhang et al., 2021). Also, research has indicted that the inquisitiveness virtue—representing such strengths as curiosity, humor, creativity, social intelligence,

and zest—influences psychological stress (Zhang et al., 2021). Furthermore, a longitudinal study has demonstrated that a high degree of character strengths enables students to experience less academic-related stress throughout the semester and flourish after experiencing mild depression symptoms (Duan, 2016). With regard to the buffering function, character strengths have been shown to protect individuals from different types of stress; for instance, COVID-19 stress and job stress (Harzer & Ruch, 2015; Umucu et al., 2021).

Character strengths play a stress-buffering role on account of several reasons. Three possible reasons are discussed here. First, individuals having a good reservoir of character strengths as personal resources perceive low levels of stress that they can counter by applying positive psychological adaptation strategies embodied in their strengths (Lee et al., 2019). Second, individuals possessing high levels of character strengths may exhibit improved physiological habituation to frequent stress (Harzer & Ruch, 2015); that is, they may recover more quickly from stress-related physiological responses. Physiological habituation is a form of adaptation that helps in managing stress and protecting against the negative impacts of chronic stress (cf. Barthel et al., 2025). Third, character virtues may also help in minimizing the exposure to certain kinds of stress. For instance, interpersonal strengths may help in building strong connections, which are crucial for stress management as they provide emotional support, a sense of belonging, and practical assistance. In addition, cognitive strengths may help to assess a stressful situation more rationally and therefore, minimize the effect of stress on positive outcomes. Cognitive strengths may also help in identifying a viable coping strategy to combat stress in a specific situation (cf. Harzer & Ruch, 2015). Furthermore, emotional and cognitive strengths can help in enhancing personal insight, motivation, and a sense of adequacy and personal competency. These may be crucial for building self-esteem and self-confidence as protective factors against the negative effects of stress.

It is noteworthy that research on character strengths as buffers against academic stress is scare. However, considering the capacity of character strengths and virtues to alleviate the negative effect of different kinds of stress and/or stressful situations, it is most likely that they serve as protective factors against the academic stress faced by university students. For instance, *hope* as a belief in the future and the competence to achieve goals can motivate students to persevere through academic stress and related challenges. Also, *perseverance* as the ability to persist in the face of obstacles is imperative for managing the academic demands that may cause academic stress. Furthermore, *social intelligence* denoting the skills to understand and interact with others can help students build supportive relationships, which provide emotional support to address academic stress. Moreover, *curiosity* as the desire to learn and explore can make academic tasks more engaging and less daunting. In essence, character strengths and virtues as thriving enablers (Niemiec, 2020)—representing a reservoir of positive resources—may serve as a protective shield for university students against the stressors emanating from within the academic setting. The same may hold true for academic strengths or virtues. In fact, the matching context (i.e., the academic setting or study domain) in case of the two constructs (i.e., academic virtues and academic stress) may be more conducive to the influence of academic virtues on academic stress.

2.6 Role of Resource Caravans in Alleviating Academic Stress

Derived from the Theory of Conservation of Resources (Hobfoll, 2010), resource caravans are an assortment of resources that may group together in several different ways to help individuals achieve positive outcomes. As such, resources caravans form an aggregate of interdependent resources. Possessing a resource may bolster another or losing one may impair another (Hobfoll, 2010). It is important to note that the combination of resources in the resource caravans should be meaningful enough to collectively solve the problem or produce the desired outcome (Carlson et al., 2023). According to the concept of resource caravans, the different academic strengths forming an academic virtue—representing psychological, social, and cognitive resources—may present a valuable combination of interdependent resources that produce a synergistic effect to combat academic stress.

2.7 Role of Broaden-and Build Theory in Undoing the Influence of Academic Stress

The Broaden-and-Build Theory (Fredrickson, 2001) provides an alternative theoretical explanation as to how character virtues may mitigate academic stress. Representing positive traits or psychological states, character virtues may act as personal resources that broaden university students' thought-action repertoires; that is, expand their horizons to permit them to gain a clear perspective of their academic situation to take the required course of action to relieve their academic stress. In essence, positive traits (academic virtues) as resources may have a reverse or undoing effect relieving individuals (university students) from the hold of the negative emotion (academic stress) by offsetting its influence (Fredrickson, 2001).

In light of the empirical evidence and the theoretical perspectives presented above, the study tests the following hypothesis:

> H The four academic virtues (justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness) will moderate the relationship between academic stress and positive mental health, while controlling for the effects of gender, age, and academic achievement.

3 Methods

3.1 Participants

Out of the 759 initial online survey responses, 6 were identified as duplicates and 11 were deemed not representative of the undergraduate student sample. This means that the final usable dataset consisted of 742 responses obtained from three public and three private universities in Karachi, Pakistan. The 416 (56%) men and 326 (44%) women forming the sample had an average of 21.68 years ($SD = 1.54$) and 675 (91%) students reported being single. Students were enrolled in undergraduate programs falling under the following faculties: Health Sciences (15%), Law (15%), Electrical and Computer

Engineering (15%), Pharmaceutical Sciences (14%), Fashion Design (13%), Information Technology (12%), Management Sciences (9%), and Life Sciences (7%).

3.2 Instruments

3.2.1 Character Strengths Scale for University Students (CSSUS)

The academic virtues were measured through this 24 items 4-factor scale developed by Green and Karuppannan (2025a). A sample item of the scale representing the strength of open-mindedness is: "I use critical thinking in my studies to analyze concepts from different angles." The scale uses a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*) for rating the items. The CSSUS has demonstrated good psychometric properties (cf. Green & Karuppannan, 2025a, 2025b) as reviewed in the following paragraphs.

Exploratory Factor Analysis (EFA) was conducted on the 24 items of the CSSUS using a sample of 372 undergraduate students from Peshawar, Pakistan. Prior to performing EFA, the adequacy of factor analysis was confirmed through the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (0.92) and the Bartlett's Test of Sphericity [χ^2 (276, N = 372) = 3087.89, p < .001]. Next, EFA was performed using principal axis factoring with promax rotation. Four criteria (scree test, parallel analysis, variance accounted for, and analysis of conceptual interpretability) were used to determine the factor structure of the CSSUS. These criteria indicated four factors of the CSSUS, which presented a psychologically meaningful solution based on a simple, clear, and logical allocation of the 24 academic strengths under the relevant factors (cf. Figure 2). A number of a priori criteria were also used as guidelines for item retention or deletion. For instance, all 24 items were retained because their factor loadings were well above the minimum acceptable limit of 0.3. Additionally, each factor comprised more than three items. Moreover, the difference between the highest and the second highest loadings was much greater than 0.15. Hence, all items were retained (cf. Green & Karuppannan, 2025a).

Thereafter, *Confirmatory Factor Analysis* (CFA) was used to confirm the four-factor structure of the CSSUS in a second sample of undergraduate students (N = 368) from Peshawar using the maximum likelihood estimation method. The first-order CFA model indicated a good fit, i.e., χ^2 (246) = 582.71; p < .001; χ2/df = 2.37; RMSEA = 0.06; RMSEA 90% CI [0.06–0.07]; SRMR = 0.05; CFI = 0.97; TLI = 0.97; NFI = 0.95. Factor loadings ranged from 0.52 to 0.77. However, the moderately strong correlation between the factors suggested the presence of a general factor. As such, a unidimensional model, a second-order model and a bifactor model were tested. Results indicated that compared to the aforementioned three models, the first-order CFA model had the best fit (cf. Green & Karuppannan, 2025a).

Furthermore, the internal consistency reliability amounted to 0.81 for justice and positivity, 0.77 for wisdom and excellence, 0.72 for courage and cautiousness, and 0.80 for knowledge and purposefulness (Green & Karuppannan, 2025a). Pertaining to the study sample, the internal consistency reliability of—the four academic virtues—justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness calculated to 0.84, 0.79, 0.73, and 0.81 respectively. Higher scores on an academic virtue reflect its greater application.

3.2.2 Positive Mental Health Scale (PMHS)

Developed by Lukat et al. (2016), this nine-item (e.g., "I am a calm, balanced human being") scale assesses general emotional, psychological, and social well-being. The items of PMHS were rated on a 5-point Likert-type scale (1 = *strongly disagree*; 5 = *strongly agree*). In a sample of German university students, the reliability of the PMHS amounted to 0.92 (Lukat et al., 2016). In the current sample, the reliability calculated to 0.90. The higher the score on the PMHS, the more positive is the mental health.

3.2.3 Perceived Pressures To Perform Scale (PPPS)

The seven-item PPPS is a subscale of the Revised 15-Item Perception of Academic Stress Scale (Fisher & Pidgeon, 2018). The revised scale has been derived from the 18-item Perception of Academic Stress Scale by Bedewy and Gabriel (2015). The items of the PPPS (e.g., "I am unable to catch up if I get behind on work") were rated on a 5-point Likert-type scale (1 = *strongly agree*; 5 = *strongly disagree*). The internal consistency reliability of the PPPS reported by Fisher and Pidgeon (2018) computed to 0.71. In the study sample, the Cronbach's alpha value amounted to 0.77. Higher scores on the PPPS suggest higher levels of academic stress experienced by students.

3.3 Procedure

This study is based on the author's PhD research associated with the School of Graduate Studies, Asia e University, Malaysia. This research was affiliated with Preston University, Islamabad Campus, Pakistan. Participants were selected through convenience sampling. After obtaining the approval for collecting data from the six universities, the link to the online survey was shared with their programs staff, faculty coordinators, and student affairs coordinators. The link was also posted in different WhatsApp class groups with details of the study. Data were collected from students of different undergraduate programs under the eight disciplines mentioned in section 3.1. Students participated voluntarily and anonymously in the study. Participants were asked to read the details of the study on the webpage preceding the survey. Checking the "I agree" option at the bottom of the webpage and clicking on the next button noted their consent to participate in the study. Furthermore, participants had to rate all the survey items for it to be submitted.

4 Results

4.1 Preliminary Analysis

According to the Harman's single factor test, the threat of common method bias was ruled out because the percentage of total variance was less than 50% for the total survey items of the sample. Table 1 shows the mean and standard deviation of the study variables and the correlations between them. The four academic virtues were

positively correlated with each other and with positive mental health, while the virtues and positive mental health were negatively correlated with academic stress. Further, the variables indicated appropriate normality, as the values of skewness were between −2 and +2 and those for kurtosis between -7 and +7 (Byrne, 2010; Hair et al., 2010). The analysis showed that it was appropriate to test the moderation models.

4.2 The Moderation Analyses

A series of four moderation analyses were conducted using Model 1 of the PROCESS macro version 4.2 for SPSS (Hayes, 2022) to examine whether the four virtues individually influenced the relation between academic anxiety and positive mental health, while controlling for the effects of gender, age, and academic achievement.

4.2.1 Justice and Positivity as a Moderator

As shown in Table 2, the main effects for academic stress ($b=-0.17$; $SE=0.04$; $p<.001$) and the justice and positivity virtue ($b=0.31$; $SE=0.03$; $p<.001$) were significant. The same held true for their interaction term ($b=-0.03$; $SE=0.01$; $p<.001$), indicating that justice and positivity was a significant moderator of the effect of academic stress on positive mental health. Next, the tests of simple slopes indicated that moderate ($b=-0.17$; $SE=0.04$; $p<.001$) and high ($b=-0.33$; $SE=0.06$; $p<.001$) levels of justice and positivity—representing the 0 and +4.62 (at +1 *SD*) levels respectively—minimized the negative influence of academic stress on positive mental health, while controlling for the effects of gender, age, and academic achievement.

Table 1 Descriptive statistics and correlations

No.	Variable	M	SD	Skew.	Kurt.	1	2	3	4	5	6
1	Justice and Positivity	29.86	4.62	−1.69	3.75	—	0.45***	0.49***	0.50***	−0.10**	0.37***
2	Wisdom and Excellence	26.38	5.22	−0.98	1.19		—	0.55***	0.42***	−0.13***	0.37***
3	Courage and Cautiousness	22.84	4.80	−0.88	0.57			—	0.46***	−0.10**	0.36***
4	Knowledge and Purposefulness	15.96	3.55	−1.29	1.42				—	−0.16***	0.30***
5	Academic Stress	21.17	3.28	−0.15	−0.05					—	−0.18***
6	Positive Mental Health	36.69	3.99	−1.00	1.84						—

**$p<.01$; ***$p<.001$

Table 2 Justice and Positivity Moderation Model

		Coeff	*SE*	*t*	*p*	LLCI	ULCI
Academic Stress		−0.17	0.04	−4.17	<0.001	−0.25	−0.09
Justice and Positivity		0.31	0.03	10.62	<0.001	0.25	0.37
Interaction Term		−0.03	0.01	−4.14	<0.001	−0.05	−0.02
Gender		0.29	0.27	1.08	>0.05	−0.24	0.83
Age		−0.11	0.09	−1.21	>0.05	−0.28	0.07
Academic Achievement		0.31	0.28	1.12	>0.05	−0.23	0.85
Model Summary: R^2 =.18; F (6, 735) = 27.03; p <.001							
Test of the highest order unconditional interaction: ΔR^2 =.02; F (1, 735) = 17.17; p <.001							
Conditional Effects of Academic Stress at values of the Justice and Positivity Virtue Moderator							
Justice and Positivity		Effect	*SE*	*t*	*p*	LLCI	ULCI
Low	−4.62	−0.01	0.06	−0.24	>0.05	−0.12	0.10
Moderate	0.00	−0.17	0.04	−4.17	<0.001	−0.25	−0.09
High	+4.62	−0.33	0.06	−5.96	<0.001	−0.44	−0.22

4.2.2 Wisdom and Excellence as a Moderator

Table 3 shows that the main effects for academic stress (b = −0.16; SE = 0.04; p <.001) and the wisdom and excellence virtue (b = 0.28; SE = 0.03; p <.001) were significant. Their interaction term was also significant (b = −0.03; SE = 0.01; p <.01), signifying that the wisdom and excellence virtue was a significant moderator of the effect of academic stress on positive mental health. In addition, for a better interpretation of the moderated relationship, the tests of simple slopes were performed. These suggested that moderate (b = −0.16; SE = 0.04; p <.001) and high (b = −0.30; SE = 0.06; p <.001) levels of wisdom and excellence—representing the 0 and +5.23 (+1 SD) levels respectively—minimized the negative influence of academic stress on positive mental health, while controlling for the effects of gender, age, and academic achievement.

Table 3 Wisdom and Excellence Moderation Model

		Coeff	*SE*	*t*	*p*	LLCI	ULCI
Academic Stress		−0.16	0.04	−3.95	<0.001	−0.24	−0.08
Wisdom and Excellence		0.28	0.03	10.56	<0.001	0.23	0.33
Interaction Term		−0.03	0.01	−3.43	<0.01	−0.04	−0.01
Gender		−0.13	0.27	−0.46	>0.05	−0.66	0.41
Age		−0.12	0.09	−1.36	>0.05	−0.29	0.05
Academic Achievement		0.23	0.28	0.84	>0.05	−0.31	0.78
Model Summary: R^2 =.17; F (6, 735) = 25.28; p <.001							
Test of the highest order unconditional interaction: ΔR^2 =.01; F (1, 735) = 11.79; p <.01							
Conditional Effects of Academic Stress at values of the Wisdom and Excellence Moderator							
Wisdom and Excellence		Effect	*SE*	*t*	*p*	LLCI	ULCI
Low	−5.23	−0.02	0.06	−0.41	>0.05	−0.14	0.09
Moderate	0.00	−0.16	0.04	−3.95	<0.001	−0.24	−0.08
High	+5.23	−0.30	0.06	−5.25	<0.001	−0.41	−0.19

4.2.3 Courage and Cautiousness as a Moderator

According to Table 4, the main effects for academic stress ($b = -0.18$; $SE = 0.04$; $p < .001$) and the courage and cautiousness virtue ($b = 0.29$; $SE = 0.03$; $p < .001$) were significant. Further, their interaction term was also significant ($b = -0.02$; $SE = 0.01$; $p < .01$), signifying that the courage and cautiousness virtue was a significant moderator of the effect of academic stress on positive mental health. In addition, for a better interpretation of the moderated relationship, the tests of simple slopes were performed. These suggested that moderate ($b = -0.18$; $SE = 0.04$; $p < .001$) and high ($b = -0.29$; $SE = 0.06$; $p < .001$) levels of courage and cautiousness—representing the 0 and +4.80 (+1 *SD*) levels respectively—minimized the negative influence of academic stress on positive mental health, while controlling for the effects of gender, age, and academic achievement.

4.2.4 Knowledge and Purposefulness as a Moderator

Table 5 presents the main effects for academic stress ($b = -0.16$; $SE = 0.04$; $p < .001$) and the knowledge and purposefulness virtue ($b = 0.33$; $SE = 0.04$; $p < .001$) were significant. In addition, their interaction term was significant ($b = -0.03$; $SE = 0.01$; $p < .01$), suggesting that the knowledge and purposefulness virtue was a significant moderator of the effect of academic stress on positive mental health. Moreover, for a better interpretation of the moderated relationship, the tests of simple slopes were performed. These suggested that moderate ($b = -0.16$; $SE = 0.04$; $p < .001$) and high ($b = -0.28$; $SE = 0.06$; $p < .001$) levels of knowledge and purposefulness—representing the 0 and +3.55 (+1 *SD*) levels respectively—minimized the negative influence of academic stress on positive mental health, while controlling for the effects of gender, age, and academic achievement.

As shown in Fig. 3, moderate and high levels of each virtue (justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness) minimized the negative effect of academic stress on positive mental health,

Table 4 Courage and cautiousness moderation model

		Coeff	*SE*	*t*	*p*	LLCI	ULCI
Academic Stress		−0.18	0.04	−4.34	<0.001	−0.26	−0.10
Courage and Cautiousness		0.29	0.03	10.20	<0.001	0.24	0.35
Interaction Term		−0.02	0.01	−2.95	<0.01	−0.04	−0.01
Gender		0.01	0.27	0.04	>0.05	−0.52	0.54
Age		−0.13	0.09	−1.50	>0.05	−0.30	0.04
Academic Achievement		0.07	0.28	0.24	>0.05	−0.48	0.62
Model Summary: $R^2 = .17$; $F(6, 735) = 24.54$; $p < .001$							
Test of the highest order unconditional interaction: $\Delta R^2 = .01$; $F(1, 735) = 8.69$; $p < .01$							
Conditional Effects of Academic Stress at values of the Wisdom and Excellence Moderator							
Courage and Cautiousness		Effect	*SE*	*t*	*p*	LLCI	ULCI
Low	−4.80	−0.06	0.06	−1.14	>0.05	−0.18	0.05
Moderate	0.00	−0.18	0.04	−4.34	<0.001	−0.26	−0.10
High	+4.80	−0.29	0.06	−5.17	<0.001	−0.41	−0.18

Table 5 Knowledge and purposefulness moderation model

	Coeff	*SE*	*t*	*p*	LLCI	ULCI
Academic Stress	−0.16	0.04	−3.65	<0.001	−0.24	−0.07
Knowledge and Purposefulness	0.33	0.04	8.16	<0.001	0.25	0.41
Interaction Term	−0.03	0.01	−2.85	<0.01	−0.06	−0.01
Gender	0.5	0.28	−0.17	>0.05	−0.59	0.50
Age	−0.7	0.09	−0.79	>0.05	−0.25	0.11
Academic Achievement	0.48	0.28	1.69	>0.05	−0.08	1.04
Model Summary: R^2 =.17; F (6, 735) = 17.24; p <.001						
Test of the highest order unconditional interaction: ΔR^2 =.01; F (1, 735) = 8.10; p <.01						
Conditional Effects of Academic Stress at values of the Wisdom and Excellence Moderator						
>Knowledge and Purposefulness	Effect	*SE*	*t*	*p*	LLCI	ULCI
Low −3.55	−0.04	0.06	−0.57	>0.05	−0.16	0.09
Moderate 0.00	−0.16	0.04	−3.65	<0.001	−0.24	−0.07
High +3.55	−0.28	0.06	−4.70	<0.001	−0.39	−0.16

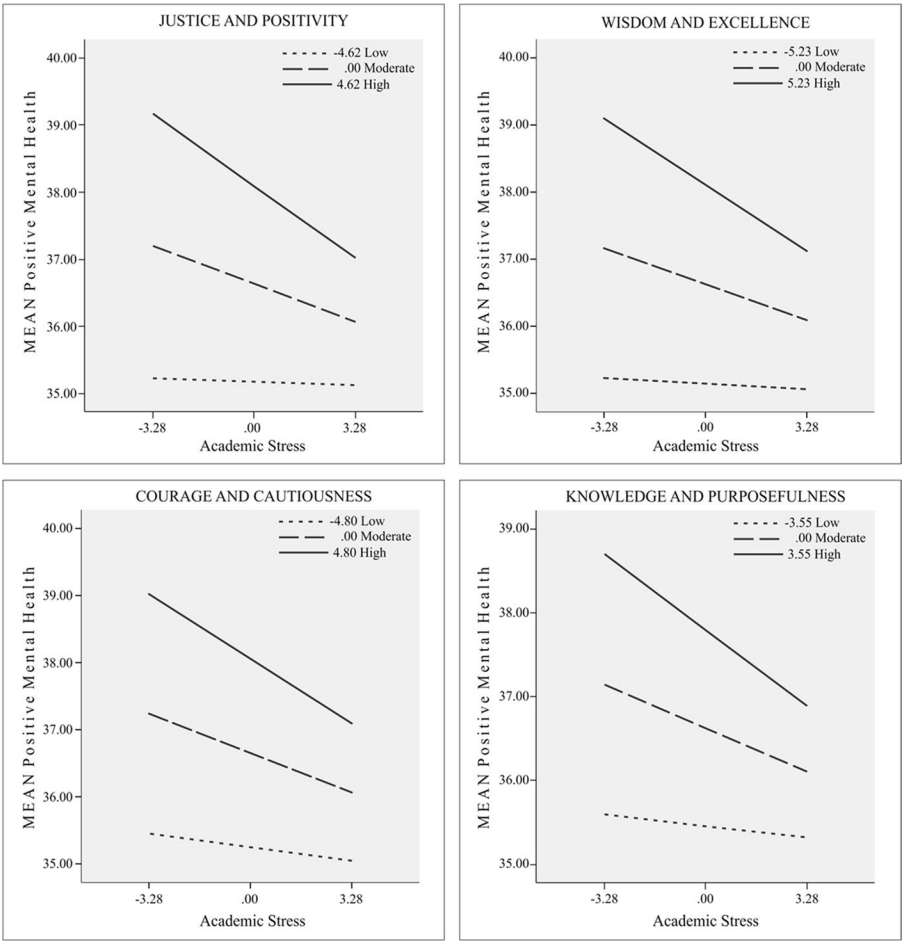


Fig. 3 The effect of Academic Stress on Positive Mental Health at Different Levels of each Academic Virtue

while controlling for the effects of gender, age, and academic achievement. Hence, results confirm the *Hypothesis*.

5 Discussion

This research tested the effectiveness of academic virtues for minimizing the adverse effect of academic stress on positive mental health. Results indicated that irrespective of gender, age, and academic achievement, undergraduate students who experience academic stress, but apply their academic virtues (justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness) to a greater extent are able to attain higher levels of positive mental health. Academic virtues likely play a critical role in shielding students from the negative impact of academic stress on positive mental health.

The *justice and positivity* virtue fosters a prosocial and inclusive classroom/campus environment as well as builds and maintains a positive and grateful outlook towards university education pertinent for attaining academic success (Green & Karuppannan, 2025a). This virtue increases students' motivation and engagement in studies as well as permits them to engage in supportive interactions and experience a sense of belonging and adequacy. As such, justice and positivity most likely serves as a protective shield against academic pressures.

The w*isdom and excellence* virtue reflects enhanced personal and social awareness backed by a clever sense of humor. It also represents the astuteness to enhance learning based on using innovative ideas and critical thinking in studies, demonstrating leadership potential, and securing good interpersonal relations with faculty (Green & Karuppannan, 2025a). This virtue helps students to understand the bigger picture, enhance self-confidence, and strive for academic excellence. Allowing students to apply a meaningful approach to learning, the wisdom and excellence virtue can create a strong foundation for students to thrive academically and may therefore prevent them to get overwhelmed by academic demands.

The *courage and cautiousness* virtue represents the competence to address academic problems with confidence, meet university deadlines despite obstacles, complete exams and quizzes with honesty, and remain disciplined in studies. The virtue also reflects the capacity to consider the potential impact of one's words in the university environment. Practicing courage and cautiousness also fosters a renewed sense of energy and enthusiasm while studying on campus grounds (Green & Karuppannan, 2025a). The courage and cautiousness virtue empowers students to tackle academic tasks head-on without being overwhelmed by fear and anxiety, plan their studies effectively, demonstrate good study habits, and develop a deeper understanding of concepts through genuine engagement with the subject matter. Fuelling the drive to learn and achieve, this virtue can empower students to take charge over their academic life, which may decrease overwhelm and hence contribute to a more manageable and less stressful academic experience.

The *knowledge and purposefulness* virtue denotes a thirst for knowledge to advance in one's field, learn from knowledgeable individuals, and derive a sense of purpose in life through one's studies (Green & Karuppannan, 2025a). This virtue

furthers a genuine interest in one's field of study, fuels active learning and exploration, helps build cognitive resources, and provides a framework and direction for pursuing academic goals and navigating academic challenges. Enabling students to approach studies with a sense of enthusiasm, progression, and meaningfulness, the knowledge and purposefulness virtue can increase study engagement triggered by a natural motivation to learn well and prosper. This may reduce feelings of obligation and overwhelm and therefore make the academic tasks feel less stressful.

At the moment, a comparison of the findings of this research is restricted because academic virtues have been recently conceptualized. There is sparse research on academic virtues and therefore future research may attempt to validate the findings of the four moderation models. However, character strengths have been shown to play an instrumental role in shielding individuals from different types of stress. Prior research indicates that character strengths buffered the relationship between COVID-19 stress and depression symptoms (Liu & Wang, 2021) as well as between COVID-19 stress and well-being (Umucu et al., 2021). In the two studies, the total score of the 24 strengths—as an index of global character strengths—moderated the relationship between the independent variable and dependent variable. It is noteworthy that Liu and Wang (2021) did not examine individual character virtues as moderators. On the other hand, Umucu et al. (2021) tested the six character virtues (i.e., wisdom and knowledge, courage, humanity, justice, temperance, and transcendence) as moderators, but none of them served as a moderator between COVID-19 stress and well-being. Furthermore, Harzer and Ruch (2015) reported that the five character virtues—emotional strengths, interpersonal strengths, intellectual strengths, strengths of restraint, and theological strengths—did not moderate the relationship between frequency of job stress and job satisfaction. Moreover, they did not test the total score of the 24 strengths as a moderator between frequency of job stress and job satisfaction.

The domain-general character virtues did not serve as moderators possibly because they did not represent the health domain in the case of COVID-19 stress (Umucu et al., 2021) and the work domain in the context of job stress (Harzer & Ruch, 2015). In the two studies, the interaction between a domain-general moderator and a domain-specific independent variable was tested. As such, the moderator and the independent variable did not operate within the same setting. It is therefore quite possible that context-relevant variables have a greater possibility to interact with each other. Academic virtues and academic stress as context-relevant variables most likely interacted with each other because of the similar setting (i.e., the study domain). Fundamentally, academic virtues and academic stress represent two distinct yet meaningful aspects of the academic setting. This is possibly why the four academic virtues moderated the relationship between academic stress and positive mental health. Domain-specificity may therefore facilitate interaction between variables in matched contexts. When variables are examined within a context that aligns with their inherent domain, the interaction between them is most naturally facilitated and is more likely to occur. Future research is however needed to further support the role of context-matching constructs in moderation analyses. Many studies have underscored the importance of domain-specific constructs in producing robust findings because they are more relatable to the context (e.g., Green & Karuppannan, 2025a; Pathki et al., 2022; Teimouri et al., 2022; Wong & Cheung, 2024).

The total score of the 24 strengths served as a moderator in the two studies (Liu & Wang, 2021; Umucu et al., 2021) despite its domain-general nature. This is likely because the cumulative effect of the 24 character strengths—representing a huge reservoir of personal resources—can lead to increased resilience, effective coping mechanisms, and enhanced well-being, which likely contribute collectively to buffer the negative influence of stress. Also, in the context of the stress-buffering model (Cohen & Mills, 1985), the social, psychological, and intellectual resources embodied in the 24 character strengths likely equip individuals to perceive stressors as less daunting and more within their capacity to manage. Essentially, a well-developed character strengths profile may foster a sense of control and predictability when faced with challenging situations.

It is relevant to point out here that while the strong correlations (r=.45–0.66) between the academic virtues suggest their interdependence; this interconnectedness makes it difficult to determine which specific virtue has a unique buffering effect against academic stress. Despite their individual distinctiveness (cf. Green & Karuppannan, 2025a) and roles in stress reduction, their shared nature likely explains why they all emerged as significant moderator variables.

5.1 Theoretical Contribution

This study adds to the sparse research on positive mental health, which provides a holistic view of mental health pertinent for academic success (Baron, 2023; Margraf et al., 2020). In addition, there is limited research on academic virtues and strengths. So far only one study has been published that demonstrates a strengths-based mechanism driven by academic virtues. In this study, the strengths-based process entailed bolstering the application of academic virtues as resources through an optimistic outlook to augment career adaptability among university students (cf. Green & Karuppannan, 2025a). It is noteworthy that the domain-specificity of character strengths and virtues is in itself a novel contribution to the strengths literature.

This study is possibly the first to demonstrate the stress-buffering role of individual virtues. In previous studies—as reviewed earlier—individual character virtues did not moderate the relationship between the independent variable and dependent variable (Harzer & Ruch, 2015; Umucu et al., 2021). In the study by Umucu et al. (2021), the total score of the 24 strengths representing the character strengths construct moderated the relationship between the independent variable and dependent variable. The same held true for the study by Liu and Wang (2021). It is important to note that Harzer and Ruch (2015) did not test the total score of the 24 strengths as a moderator. This study makes an important contribution by focusing on domain-specificity as explicated in the previous section. In regards to the moderation analyses, academic virtues and academic stress as context-relevant variables likely interact because they operate within the same setting (i.e., the study domain) and represent two distinct aspects of the academic setting itself. In the studies reviewed above, the interaction between a domain-general moderator and a domain-specific independent variable was tested. These studies did not rely on context-matching variables. It may therefore be inferred that the combined use of 24 strengths in the domain-general context may be helpful in promoting successful coping skills for managing stress.

However, the combination of strengths embodied in each character virtue may not be sufficient to minimize the negative influence of different kinds of stress. On the other hand, domain-specific virtues—each embodying a combination of academic strengths (reflecting the study domain)—may interact with academic stress (also representing an important aspect of the study domain) to influence positive mental health. Previous research has also indicated the utility of academic virtues as a domain-specific construct in terms of providing new information above and beyond the measures of character strengths and virtues that already exist (Green & Karuppannan, 2025a). Academic virtues have an added value, which is most likely their domain-specific nature. As such, academic virtues and academic stress are likely to interact with each other because they operate within the study domain. Each academic virtue represents a set of valuable academic resources that is aimed at enriching university life (Green & Karuppannan, 2025b).

Furthermore, results of the moderation analyses support the stress-buffering model (Cohen & Wills, 1985) by indicating the role of the four academic virtues as ideal psychological resources in empowering university students to manage academic stress with confidence based on the perception that it is controllable. Please refer to the role of each academic virtue in empowering university students to manage academic stress discussed at the beginning of this section. Results also demonstrate an additional application of resource caravans (Hobfoll, 2010) and the Broaden-and-Build Theory (Fredrickson, 2001) with regard to the role of academic virtues as enduring personal resources in mitigating academic stress.

5.2 Practical Implications

Findings suggest that all the 24 academic strengths—embodied in the four virtues—are important for minimizing academic stress. As such, university students may need to be motivated to identify their dominant academic strengths and develop their lesser strengths to apply them to combat academic stress as well as enhance positive mental health. To this end, various strategies may be used in future strengths-based interventions for university students. First, *strengths-spotting* may help students in identifying their dominant or signature strengths as well as allow the mindful use of the identified academic strengths to cope with different academic stressors (Niemiec, 2020). Second, *solution-focused brief therapy* may be used to focus on building solutions—rather than analyzing problems—to help students identify their strengths and resources to achieve the desired outcome, such as positive mental health (cf. Caddell, 2024). Third, *character strengths towing* or the *towing principle* may be applied by strengths-based practitioners or counsellors to help students develop their lesser strengths based on their dominant strengths (Green, 2022). Fourth, *positive psychology interventions*, such as gratitude exercises and acts of kindness may be particularly useful for boosting positive emotions and mental well-being by leveraging specific strengths (cf. Cunha et al., 2019; Fryburg, 2021; Gander et al., 2013). Finally, the *strengths-based cognitive behavioral therapy* approach may help students identify and leverage their strengths to overcome negative thoughts and behaviors leading to stress (cf. Padesky & Mooney, 2012).

Additionally, academic strengths may be instilled in university students through *activity-based lectures and workshops*—focusing on different virtues or even individual strengths—organized throughout the year based on the emotionalized learning experiences (ELE) format (cf. Green, 2019, 2024a, 2024b). These experiences aim at cultivating affective competencies (e.g., motivation to learn, social competence, personal insight, adaptability, aesthetic sensitivity, ethical behavior, and good study habits) among learners. The ELE format is based on the (1) cognitive setting for learning (e.g., enabling students to apply higher-order thinking skills, engage in critical self-reflection, and use their previous knowledge to acquire new concepts), (2) emotional setting for learning (e.g., forging affective connections with learners and motivating them to use their strengths to excel in their studies and future careers), (3) social setting for learning (e.g., using collaborative learning as well as allowing learners to engage in healthy interactions and help each other learn well) and (4) teaching and learning resources (e.g., using interesting, need-relevant, and current content imparted through experiential learning activities). These four aspects enrich the teaching-learning process to make learning more fulfilling, memorable, and relevant to the real world (cf. Green & Rizwan, 2023, 2024).

University counselors may help in alleviating academic stress by: (a) providing a safe environment in which students are encouraged to share their anxieties and academic challenges emanating from within the university environment, (b) applying cognitive behavioral therapy strategies (e.g., positive visualizations, cognitive priming, and identification of self-defeating beliefs), (c) helping students identify their stress triggers, (d) making academic support referrals (e.g., referring students to tuition and learning centers, faculty advisors, student affairs practitioners, and academic advisors), (e) encouraging students to use stress management techniques (e.g., practicing gratitude, exercising, eating healthy, getting enough sleep, listening to music, engaging in outdoor activities, pursuing a hobby, and practicing mindfulness), and (f) teaching students how to manage their time (e.g., creating a schedule/to do list, prioritizing tasks, avoiding procrastination, learning to say no, breaking down large tasks, and curtailing distractions) to effectively cope with the daily academic demands (Davis et al., 2021; Green, 2021; Momentum Psychology, 2024). Moreover, counselor support may take the shape of (a) modifying interventions for alleviating academic stress and associated mental health issues to further positive mental health based on each students' strengths profile and unique needs; (b) collaborating with faculty members, academic advisors, and other student support services to identify and implement an all-encompassing approach to coping with academic stress based on a screening mechanism for monitoring students' exposure to academic stressors (Green et al., 2022), and (c) providing continuous support to students by keeping in touch with them on a regular basis to monitor their progress and well-being based on the use of their academic strengths.

Universities may offer psychiatric and psychotherapeutic care to identify and address potential mental health issues like anxiety and depression that may be the cause or consequence of academic stress. It is also important to have a timely, confidential, accessible, and well-communicated referral process for specialized treatment of university students (Wang & Liu, 2024). In addition, establishing and maintaining social connections on campus—through group activities, interest clubs, and volun-

teer programs—reduce isolation and bolster positive mental health. It may also be important to reduce the stigma surrounding mental disorders to encourage students to seek help without fear. To this end, stigma awareness training and having safe and supportive spaces where university students may openly discuss their issues may prove to be of great value (Davis et al., 2021). Furthermore, activity-based workshops based on the ELE format may be effective at furthering positive mental health. These may also cover the symptoms of mental disorders and strategies for preventing and treating them.

5.3 Limitations and Future Research Prospects

This study used three measures, which may have introduced self-report biases because of social desirability, acquiescence, and demand characteristics. However, the absence of common method bias was ruled out as indicated by the Harman's single factor test. Furthermore, the strategies used to control common method bias included (a) the development of an information webpage preceding the survey to provide study participants the relevant research information, (b) concise and easy-to-follow instructions for completing the survey, and (c) shuffling the items of the three measures on the survey (Jordan & Troth, 2020). Mixed-method strengths intervention studies in the future may provide valuable insights into how students may use their academic strengths to cope with academic stress and foster positive mental health.

Furthermore, the interconnectedness of academic virtues can obscure the specific role of each virtue in mitigating the negative impact of academic stress on positive mental health. Therefore, future experimental research may be required to resolve this ambiguity based on isolating and examining the individual contribution of each academic virtue.

Additionally, there are certain limitations inherent in the moderation models, which this study has attempted to overcome. The use of covariates in all likelihood ruled out confounding variables (Rohrer et al., 2022). Further, identifying a true moderator variable can be a somewhat difficult task. Academic virtues are based on a solid rationale and theoretical footing as well as considerable literature support (cf. Green & Karuppannan, 2025a, 2025b). As such, academic virtues as personal/study resources are suitable for serving as a protective shield against academic stress. Spurious moderation effects may have also been ruled out as the correlation between the predictor (academic stress) and each academic virtue (moderator) was low (Daryanto, 2019). Finally, to accurately detect moderation effects, a large sample size is required. This study used a fairly large sample size to adequately test the moderation effects (Memon et al., 2019).

In the future, the role of academic virtues as moderators may be analyzed between (a) academic resilience and academic success, (b) academic anxiety and adaptation to university life, and (c) negative career outlook and engagement in career construction. These strengths-based processes may help in academic advising and career counselling efforts as well as launching relevant strengths interventions for fostering student development, academic well-being, and career readiness.

6 Conclusions

This study provides evidence of the stress-buffering role of academic virtues. Moderate and high levels of each virtue (justice and positivity, wisdom and excellence, courage and cautiousness, and knowledge and purposefulness) minimized the negative effect of academic stress on positive mental health. The inherent value of academic virtues is often tied to their specific academic context, and these virtues are likely to interact with academic stress, as both are key aspects of the academic environment. Essentially, academic virtues provide unique benefits that are likely amplified by the context of the academic setting. Each academic virtue acts as a vital resource in contributing to a richer university experience. This study therefore provides a foundation for testing different strengths-based methodologies that incorporate academic virtues to advance the fields of educational, vocational, and positive psychology by providing novel insights and interventions.

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Author Contributions Z.A.G. contributed to the conception and design of the work; acquisition, analysis, and interpretation of data; and drafted, critically revised, and finalized the work.

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Data Availability The data and materials necessary to reproduce the findings reported in this manuscript are available at: https://osf.io/zpd5c/.

Declarations

Informed Consent Informed consent was obtained from all individual participants included in the study.

Ethical Approval This study was approved by the Research Ethics Committee of Preston University Kohat (Reference no: 11-302-2025). All procedures performed in the study were in accordance with the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Competing Interests The author declares no competing interests.

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