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Student Well-Being in Higher Education: A Study Demands–Resources Theory Approach to Academic Stress, Workload, Institutional Support and Resources, and AI Integration

Rawan Khaled Diabat, Mehmet Şükrü Bellibaş

Abstract

Background/purpose. Psychological well-being is a key factor in student success and a priority in global education reform, as reflected in Sustainable Development Goal 3, which promotes Good Health and Well-being. This study examines the factors influencing university students' perceived well-being in the context of higher education in the United Arab Emirates, a context that has received less attention in higher education research despite significant government investments. Guided by the Study Demands–Resources (SDR) theory, the research examines how academic demands, institutional resources, and experiences with artificial intelligence (AI) relate to student well-being.

Materials/methods. The research used a cross-sectional, quantitative survey, collecting data from 265 university students in the UAE. The study applied descriptive statistics, correlation, and regression analyses to examine the relationships between academic demands, institutional resources, and student well-being.

Results. We found that academic workload acted as a significant demand on students, serving as the strongest predictor of stress and a significant negative predictor of well-being. Conversely, AI use emerged as a key resource, positively predicting student well-being. Other institutional resources, such as lecturer support and growth opportunities, were not significant predictors of well-being or stress. Demographic analysis showed that female students reported significantly higher wellbeing.

Conclusion. Our research showed that higher education institutions should consider AI and workload as key resource and demand factors to affect student wellbeing. As AI emerges as a critical new resource, universities are advised to adopt responsive strategies that integrate AI tools while simultaneously addressing student mental health. This could reduce the perceived workload and stress level and support wellbeing.

1. Introduction

In recent years, the responsibility of higher education institutions to support student well-being has gained growing recognition, particularly as universities face increasing demands to promote not only academic success but also holistic student development (Baik, 2019; González et al., 2022). The pressures of academic workloads, performance expectations, and limited coping resources have contributed to elevated stress levels and reduced student engagement (Schneider & Preckel, 2017). An increasing number of students report challenges affecting both their mental health and academic success (Scherer, 2021). In Scherer's (2021) survey of postsecondary educators, nearly 80% believed emotional well-being is a "very" or "extremely" important factor in student success. Moreover, studies have found that dropout rates for students with diagnosed mental health problems range from 43% to 86% (Scherer, 2021). Recent global reports highlight rising levels of academic stress, anxiety, and emotional exhaustion among university students, particularly in competitive and high-demand learning environments (Baik et al., 2019; Bryant & Welding, 2023; Torrey et al., 2022). These challenges not only hinder academic performance but also negatively affect students' overall quality of life and engagement with their institutions (Bewick et al., 2010).

As higher education institutions strive to foster supportive learning environments, understanding the factors that influence student well-being, especially the balance between academic demands and available institutional resources, has become essential (Bakker, 2024). Evidence suggests that structured academic support, accessible counseling services, and inclusive peer communities can significantly improve both academic outcomes and student well-being (Baik, Larcombe & Brooker, 2019). The academic environment itself contributes significantly to increased stress and diminished well-being among students (Bayram & Bilgel, 2008). High academic demands, competitive cultures, and rapid transitions, such as shifts to hybrid or online learning, are commonly reported stressors (Schneider & Preckel, 2017). Vulnerable student groups, including graduate students, part-time learners, and those with financial difficulties, are particularly at risk of burnout or lower well-being (Richardson et al., 2018). In addition to these traditional stressors, emerging technologies such as artificial intelligence (AI) are reshaping higher education. While AI-driven tools can enhance efficiency, personalize learning, and improve access to resources, they also raise concerns related to academic integrity, digital inequality, and increased anxiety about the future of learning and employment (Holmes, Bialik, & Fadel, 2021). Thus, AI functions as both a potential resource and a stressor, influencing student well-being (Holmes et al., 2021).

While existing research has established links between academic workload, stress, and student well-being (Schneider & Preckel, 2017; Baik et al., 2019), the literature has focused mainly on general mental health challenges without fully exploring the institutional resources that may buffer these pressures. Studies often emphasize the importance of counseling services and peer support (Pointon-Haas et al., 2023). Yet, there is limited evidence on how specific institutional practices, such as lecturer support, academic guidance, and structured growth opportunities, interact with academic demands to influence student outcomes (Bakker, 2024; Richardson et al., 2018). Additionally, although AI is rapidly transforming higher education, research has predominantly examined its pedagogical and ethical implications (Holmes et al., 2021), rather than its psychological impact as both a potential resource and stressor for students. Moreover, most studies on student well-being are situated in K–12 contexts, leaving higher education underexplored despite its unique academic and developmental challenges. Existing work also relies largely on qualitative designs, which provide rich insights but limit the generalizability of findings. There is an apparent lack of quantitative evidence that systematically examines the interplay among academic demands, institutional support systems, and AI-related factors in shaping student well-being in higher education. Finally, although the United Arab Emirates (UAE) has invested heavily in higher education, there is a lack of research

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examining students' psychological well-being and the antecedents of stress or well-being in this context.

Against this background, this quantitative study aims to examine students' well-being and stress levels at universities in the UAE. Specifically, using a cross-sectional quantitative research method, the study seeks to assess the current state of student well-being and stress, explore whether these factors differ across demographic variables such as gender, academic level, and scholarship status, and analyze how academic demands influence both well-being and stress. Additionally, this study applies the Study Demands–Resources (SDR) framework to examine how academic demands, institutional resources, and AI-related experiences influence psychological well-being among university students in the UAE. Through this investigation, the study aims to provide empirical insights to inform policies and practices that foster healthier, more supportive learning environments in higher education institutions in the UAE. The following research questions guide the study:

RQ1. What are the current levels of student well-being and stress levels in UAE universities?

RQ2. Are there significant differences in well-being and stress levels based on demographic variables such as gender, academic level, or scholarship status?

RQ3. What is the relationship between academic demands and student well-being and stress levels?

RQ4. To what extent do institutional resources predict student well-being and stress in the context of higher education in the UAE?

1.1. Study Context

This research was conducted in the UAE, a nation undergoing rapid development with a higher education system comprising public, private, and international institutions. Universities in the UAE have been acknowledged for their crucial role in advancing the country's strategic objectives and contributing to global initiatives such as the United Nations Sustainable Development Goals (UNESCO, 2023). In this vibrant environment, higher education is viewed not only as a key driver of national advancement but also as a catalyst for a knowledge-based economy that prioritizes innovation, research, and student-centered learning (Areepattamannil, 2024).

Recent research indicates that higher education institutions in the UAE are undergoing substantial digital transformation, driven by national reforms (Marks et al., 2020; Marks et al., 2021). These changes have altered how universities structure learning environments, handle institutional procedures, and equip students for the demands of the future job market. Furthermore, the rapid integration of AI into teaching and learning has increased cognitive and emotional pressures on students, especially in balancing their academic obligations and adapting to changing technological demands, Resources provided by institutions, such as counseling services, academic guidance, and support for digital literacy, are inconsistently available across higher education institutions in the UAE (Swidan et al., 2025). This research is therefore particularly relevant, as it examines whether institutional resources can mitigate academic stress and enhance student well-being. It specifically examines the relationship between academic challenges and the institutional support available, as it pertains to students' mental, academic, and emotional well-being in a university environment undergoing digital transformation (Alshamsi et al., 2025).

Consequently, similar to global trends, Alalalmeh et al. (2024) reported that a significant proportion of students at UAE universities experience mental health challenges, with notable levels of depression, anxiety, and stress measured using the DASS-21 scale. Similarly, Al Marzouqi (2022) found that nearly half of students reported moderate to high academic stress levels, worsened by limited institutional mental health services and inadequate support systems. Recent studies also

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indicate that while UAE universities are investing in digital transformation and AI integration, students express uncertainty and anxiety about how these changes may affect their academic experience and employability. A survey involving 822 students across seven universities found that 79.6% use AI tools; however, many raised concerns about the lack of guidance on their use, highlighting the need for institutional support to alleviate anxiety and enhance academic experience (Swidan et al., 2025). Furthermore, about two-thirds of students report feeling anxious about AI use, with 70% expecting their universities to provide AI support tools, the highest expectation globally (Swidan et al., 2025).

1.2. Theoretical Background

This study is guided by the SDR theory, an adaptation of the Job Demands–Resources (JD-R) model, originally developed in occupational psychology and specifically extended to higher education students (Lesener et al., 2020). According to the SDR theory, study demands refer to academic pressures that require consistent effort and have the potential to deplete students' mental resources, including stress, workload, deadlines, and psychological stressors (Bakker & Mostert, 2024). Students can manage these demands and preserve their wellbeing with the aid of study resources such as academic guidance, counseling services, and institutional support. Research indicates that while adequate resources foster motivation and resilience, an imbalance in which demands exceed resources can lead to burnout and disengagement (Bakker & Mostert, 2024).

According to the JD-R model, demands and resources interact to affect performance and well-being, with job resources acting as a buffer against the detrimental effects of job demands (Bakker & Demerouti, 2017). This interaction is applied to academic settings by the SD-R framework, which acknowledges students as active agents who manage demands such as workload and performance expectations, as well as emerging issues related to AI in learning environments (Lesener et al., 2024). Peer networks, academic advising, mental health services, and digital literacy programs are examples of institutional resources that are crucial for reducing stress, improving student engagement, and enhancing overall well-being (Hakanen et al., 2006).

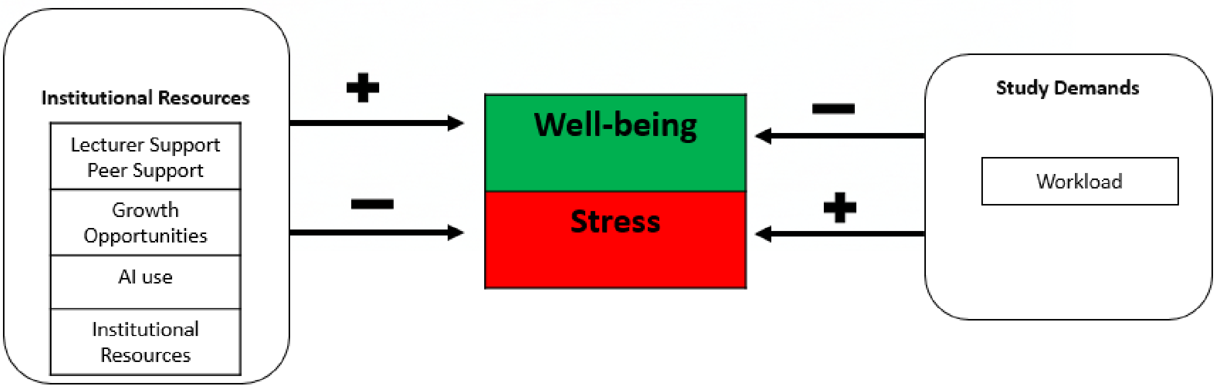

Figure 1. The Conceptual Framework of the Study: How Study Demands and Available Institutional Resources Might Be Related to Student Stress and Well-Being in Higher Education

2. Literature Review

2.1. Psychological Well-being

Psychological well-being is a multidimensional construct encompassing an individual's overall emotional and mental state, including positive emotions, life satisfaction, autonomy, personal growth, and emotional balance. It reflects how individuals perceive their happiness, cope with daily stress, maintain meaningful relationships, and pursue a sense of purpose in life (Dhanabhakyam & Sarath, 2022). Personal development, self-acceptance, and healthy relationships are closely linked to this multifaceted construct, which encompasses both affective and cognitive assessments of life.

Psychological well-being is crucial in academic settings because it influences students' engagement, motivation, and resilience, all of which are essential for both academic success and personal growth (Lizarte Simón et al., 2024). Stronger student well-being outcomes are typically fostered by universities that strike a balance between academic demands and institutional and social support systems (Chaudhry et al., 2024). On the other hand, low psychological well-being has been linked to higher dropout rates, lower academic performance, and increased stress, underscoring the need for targeted institutional interventions (Wang, 2024). Overall, these findings indicate that both academic demands and institutional resources influence student well-being.

2.2. Study Demands

2.2.1. Stress

Stress is the body's reaction to any demand, whether it comes from or is brought on by pleasant or unpleasant circumstances (Selye, 1976). Pascoe defines it as the body's and mind's reaction to challenging or threatening external or internal pressures (Pascoe et al., 2020). Stress in academic settings is often caused by factors such as exam pressure, anxiety related to failure, and uncertainty about the future. Psychological distress can result from prolonged exposure to high levels of stress because it can disrupt sleep, impair concentration, and negatively impact emotional regulation (Lee et al., 2021).

A major obstacle to students' academic success and well-being, high academic stress is also linked to anxiety, burnout, and even depression (Barbayannis et al., 2022). Stress, anxiety, and depression are all very common among university students in the United Arab Emirates, with anxiety being the most common. Vulnerability is increased by factors such as health problems and dissatisfaction with academic achievement. To reduce stigma, improve early detection, and enhance overall student well-being, these findings emphasize the need for targeted mental health interventions, professional support services within universities, and comprehensive national policies (Al Marzouqi et al., 2022). Intense academic competition and cultural expectations have also been identified as significant contributors to elevated student stress, necessitating the development of support networks that are both accessible and culturally sensitive (Alalalmeh et al., 2021).

2.2.2. Workload

Academic workload refers to the cumulative demands placed on students' time, effort, and cognitive resources through tasks such as assignments, examinations, independent study, and other academic responsibilities within a given period (Olanipekun, 2015). Academic stress is largely caused by excessive or poorly managed workloads, which frequently lead to burnout, disengagement, and poor academic performance (Salmela-Aro & Read, 2017). Students in higher education believe that an overwhelming amount of coursework is a significant cause of mental and physical health issues, low motivation, maladaptive learning behaviors, and higher dropout rates. These burdens not only cause some students to drop out of school in favor of less demanding endeavors but also hinder the development of skilled graduates, resulting in societal losses (Yangdon et al., 2021).

According to Al-Khatib (2014), students in the UAE frequently cite extended study sessions and conflicting deadlines as the main causes of their academic exhaustion. Protecting students' mental health and improving academic outcomes require addressing workload through curriculum planning and time-management support. Excessive workloads in the classroom have been linked to student stress and burnout (Misra & McKean, 2000). According to Macan et al. (1990), implementing effective time management techniques can lower stress levels and enhance academic performance. Furthermore, granting students independence in handling homework and in setting due dates can reduce stress and improve well-being (Zimmerman, 2002). To create a favorable learning environment and encourage student achievement, educational frameworks must incorporate organized curriculum planning and effective time management.

2.3. Institutional Resources

In higher education, growth opportunities are institutional mechanisms that support students' academic, professional, and personal development. These opportunities, which provide students with worthwhile experiences to enhance their learning and career readiness, include workshops, research participation, internships, and skill-building programs. These resources are crucial because they improve students' psychological functioning, sense of purpose, and future orientation, which in turn promote motivation, engagement, and optimism about their future careers (Dollinger, 2022; Ryan, 2017).

Universities in the UAE are investing more money in experiential learning initiatives to provide students with opportunities for both professional and practical development. However, issues of access and equity persist, limiting the benefits for specific student groups (Iyer, 2024). Research indicates that physical, social, and academic obstacles frequently prevent students with disabilities from pursuing higher education, thereby limiting their ability to take advantage of experiential learning opportunities (Gaad & Almotairi, 2013a). Furthermore, students' perceptions of their understanding of inclusive education policies influence their attitudes toward learning with peers who have disabilities, underscoring the need for education and training to foster inclusive and equitable settings (Gaad & Almotairi, 2013b).

Lecturer support refers to the academic and emotional guidance that faculty members provide through their availability, empathy, and feedback (Brandao & Jacomuzzi, 2025). Reduced psychological distress and higher academic satisfaction have been linked to supportive relationships with lecturers (He et al., 2025). Such assistance fosters a supportive and inspiring learning environment, which is essential in helping students overcome academic obstacles (Shen, 2024). Faculty development plays a crucial role in improving learning experiences, as evidenced by institutional efforts to support student-centered and open pedagogies (Debolina et al., 2024).

Enhancing student success and well-being in higher education requires institutional resources like libraries, academic advising, counseling, and digital learning platforms. Faculty advisors establish individualized relationships that foster academic and personal growth, and effective academic advising is crucial to student success and retention (Mathew & Ibrahim, 2023). In the meantime, digital learning platforms are changing institutional structures and objectives to make education more accessible and flexible, meeting a range of needs. They also affect teaching, learning, research, and even employment (Alenezi, 2023).

2.4. AI Perception

AI is the study of agents that receive percepts from the environment and perform actions (Russell & Norvig, 2020). Automatic feedback systems, intelligent tutoring, and intelligent scheduling are just a few examples of how AI technologies can be integrated into higher education to enhance teaching methods, cater to diverse student needs, and significantly improve personalized learning experiences (Fowler, 2023). Real-time feedback and individualized learning pathways are made possible by AI-based systems, and research has demonstrated that these features improve student engagement and academic achievement (Vieriu & Petrea, 2025). However, these developments also necessitate careful examination of their moral implications, particularly regarding educational access and equity (Fowler, 2023). Although AI has many potential advantages, its adoption has accelerated faster than institutions' readiness, especially in the UAE. As a result, students and educators hold differing opinions about the efficacy and equity of AI (Badreya, 2024). Transparent, student-centered policies must be in place alongside the use of AI in education to guarantee that concerns about academic integrity, fairness, and misuse are adequately addressed (Fowler, 2023).

3. Methodology

This research employs a cross-sectional, quantitative method. In this section, we describe the sample and instruments used in the study and explain how the data analysis was conducted.

3.1. Sample

The research was conducted in the UAE and involved 265 university students enrolled in both undergraduate and graduate programs. A convenience sampling method was used due to the accessibility of university mailing lists. The final sample (n = 265) exceeded the recommended minimum of 200 participants for SEM (Kline, 2015), ensuring adequate statistical power for CFA and regression analyses. An online survey created with Microsoft Forms was used to gather data, ensuring that participation was anonymous and voluntary. The survey featured an introductory letter that outlined the study's objectives, confirmed confidentiality, and provided instructions for participation. Before data collection, ethical approval was granted by the university's Research Ethics Committee. Once administrative consent was obtained, the survey link was shared electronically via university mailing lists. Ultimately, 265 completed responses were collected. The mandatory response fields in the digital form helped to prevent any missing values in the data. Data were collected online; therefore, self-selection bias is possible, as participation was voluntary and may not represent all student groups

Participants in the sample came from various academic levels, with 58.4% (n = 146) being undergraduates and 41.6% (n = 104) being postgraduates. Female participants constituted 63.2% (n = 158) of the total. Furthermore, 46.8% (n = 117) of the students received scholarships. The mean age of the participants was 22.6 years (SD = 4.3).

3.2. Instruments

To examine these variables, a structured survey based on the Warwick-Edinburgh Mental Well-being Scale was developed by modifying items from validated, peer-reviewed instruments (Tennant et al., 2007). The item selection was based on their relevance to the concepts of academic stress, institutional support, AI usage, and student well-being within the context of higher education. The survey included established and validated scales to effectively measure student well-being, academic experiences, and perceptions of emerging educational technologies. Items that evaluate optimism, life satisfaction, and emotional balance were modified from the Warwick-Edinburgh Mental Well-being Scale (Tennant et al., 2007). To assess academic growth, lecturer support, and the quality of advising, appropriate items were selected from the National Survey of Student Engagement NSSE (Kuh, 2001). The constructs of academic stress and workload were measured by adapting items from the Academic Stress Scale and the Academic Workload Questionnaire (Kohn & Frazer, 1986; LePine et al., 2005), concentrating on pressure and stress-related disruptions in studies.

Furthermore, given the increasing role of artificial intelligence in education, items were incorporated based on recent research examining students' perceived advantages and concerns regarding AI tools such as ChatGPT and Grammarly (Dwivedi et al., 2023; Sadiq et al., 2023). This thorough approach ensured that the survey reflected various dimensions of students' psychological well-being and academic environment. Each item underwent careful examination and adjustment for clarity and contextual appropriateness within the UAE university setting. A comprehensive breakdown of the original sources, adapted survey items, and supporting evidence (including screenshots from the original articles) is provided in Appendix B to promote transparency and ensure compliance with institutional standards for citation and copyright.

The survey comprised 34 closed-ended questions, evaluated using a 5-point Likert scale, which addressed factors such as psychological well-being, academic workload, integration of AI, support from lecturers and the institution, and availability of academic resources. Prior to its full launch, the survey was tested with a small group of students (n = 15) solely to assess clarity and contextual relevance of the items; it was not intended to evaluate psychometric properties.

This study employed a cross-sectional survey to measure multiple constructs related to student well-being, academic demands, and institutional resources, using 5-point Likert-type response options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores indicating greater presence of each construct. The primary constructs included Student Well-Being, Academic Demands (Stress and Workload), and Institutional Resources (Growth Opportunities, Lecturer Support, and Peer Support). Demographic variables, including gender, age, scholarship status, and academic level, were collected as control variables.

Student Well-Being. Assessed using the Warwick–Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007), which contains 14 items measuring emotional, psychological, and social dimensions of well-being (e.g., “I’ve been feeling optimistic about the future”). The scale demonstrated excellent internal consistency ($\alpha = .88$).

Academic Demands. Stress and Workload were measured using an adapted version of Kohn and Frazer’s (1986) Academic Stress Scale. Stress and Workload were treated as distinct constructs, each with strong internal reliability (Stress $\alpha = .86$; Workload $\alpha = .83$). Sample items include, “I feel overwhelmed by the amount of work I have to do.”

Institutional Resources. Growth Opportunities, Lecturer Support, and Peer Support were assessed using items adapted from the National Survey of Student Engagement (NSSE, 2003) and Shwedeh et al. (2024). A sample item is, “I receive constructive feedback; instructors are supportive.” Internal consistency was strong across subscales ($\alpha = .81–.84$).

Control Variables. Gender, academic level, age, and scholarship status were included as controls, given their potential influence on student well-being and academic stress (Shwedeh et al., 2024; NSSE, 2003).

3.3. Analytical Approach

Structural equation modeling (SEM) was the primary analytical method used to test the proposed SDR model. A confirmatory factor analysis (CFA) was conducted in AMOS 8.8 to evaluate the construct validity of each concept in the UAE higher education context. An exploratory factor analysis (EFA) was first conducted to explore the dimensionality of the adapted scales, followed by CFA to confirm model fit. EFA results supported the hypothesized factor structure. The model fit was assessed using standard criteria: a χ^2/df ratio of less than 3, a comparative fit index (CFI) greater than 0.90, a Tucker–Lewis index (TLI) exceeding 0.90, a root mean square error of approximation (RMSEA) below 0.08, and a standardized root mean square residual (SRMR) under 0.08, in line with recommended benchmarks (Hu & Bentler, 1999). The constructs analyzed included academic demands (related to stress and workload), institutional resources (such as lecturer support, growth opportunities, and services), student well-being, and perceptions regarding the integration of AI. Initial analyses encompassed descriptive statistics and Pearson’s bivariate correlations. The normality of data was validated before analysis, with skewness and kurtosis values remaining within the acceptable limits of ±1.

To evaluate participants' current well-being levels, descriptive statistics were computed for the well-being scale. Independent samples t-tests, one-way ANOVA, and Pearson correlations were conducted to investigate variations in well-being scores across demographic groups. For the third

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and fourth questions, which focused on the relationship between demand and resource variables and student well-being, a multiple regression model was employed.

4. Results

4.1. Reliability and Validity of Variables

Confirmatory factor analyses (CFA) were performed to assess the validity and uniqueness of the study measures. With $\chi^2/df = 1.95$, $p < .001$, RMSEA = 0.054, SRMR = 0.045, CFI = 0.96, and TLI = 0.95, the fit indices showed an excellent model fit. The measures' discriminant validity was supported by the noticeably worse fit of models that combined constructs or assumed a single factor. All standardized factor loadings exceeded 0.60 ($p < .001$). Error variances were within acceptable limits, and no modification indices exceeded 15, indicating good model fit.

Strong factor loadings, sufficient convergent validity (AVE ≥ 0.60), and high internal consistency (Cronbach's $\alpha \geq 0.81$; CR ≥ 0.83) were demonstrated by all constructs, suggesting that the scales are valid and dependable for evaluating these variables in the context of higher education in the United Arab Emirates. (See Table 1).

Table1. CFA Results: Reliability, Validity, and Model Fit

Variable	Cronbach's α	Composite Reliability (CR)	AVE	χ^2 / df	RMSEA	SRMR	CFI	TLI
Stress	0.86	0.88	0.66	0.017	0.000	0.000	1.000	1.000
Workload	0.83	0.85	0.64	1.51	0.047	0.027	0.991	0.983
AI Use	0.85	0.87	0.67	1.33	0.038	0.013	1.000	0.999
Growth Opportunities	0.81	0.83	0.60	1.51	0.048	0.025	0.999	0.997
Lecturer Support	0.84	0.86	0.65	0.14	0.000	0.000	1.000	1.000
Institutional Resources	0.82	0.84	0.62	1.95	0.054	0.045	0.96	0.95
Psychological Well-Being	0.88	0.90	0.73	1.95	0.058	0.045	0.97	0.94

4.2. Descriptive Analysis

4.2.1. Level of Student Well-Being and Stress

Students reported relatively high levels of psychological well-being ($M = 3.82$, $SD = 0.72$). The highest-rated indicators were sense of belonging ($M = 3.92$, $SD = 0.91$) and optimism about the future ($M = 3.91$, $SD = 1.03$), while study–life balance ($M = 2.99$, $SD = 0.83$) and life satisfaction ($M = 3.16$, $SD = 0.95$) were the lowest-rated components.

Regarding academic stressors, students reported moderate to high levels of stress ($M = 4.07$, $SD = 0.75$), with AI-related exam stress ($M = 3.81$, $SD = 1.14$) and a high assignment load ($M = 3.28$, $SD = 1.13$) contributing the most. Workload ($M = 3.88$, $SD = 0.89$) was positively correlated with stress ($r = .33$, $p < .01$) and negatively with well-being ($r = –.17$, $p < .05$).

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Institutional resources were positively associated with psychological well-being: institutional support ($r = .45$, $p < .01$), lecturer support ($r = .21$, $p < .01$), growth opportunities ($r = .17$, $p < .05$), and AI use ($r = .24$, $p < .01$). Lecturer support was negatively correlated with stress ($r = -.19$, $p < .01$) and workload ($r = -.18$, $p < .05$), suggesting a buffering effect against academic demands. Interestingly, the use of AI correlated positively with workload ($r = .21$, $p < .01$), indicating that students may use AI to manage heavier workloads. Age was not significantly correlated with well-being or stress.

Table 2. Descriptive Statistics and Correlations for Continuous Variables (N = 195)

Variable	M	SD	1	2	3	4	5	6	7	8
1. Age	23.05	7.89	—							
2. Stress	4.07	0.75	.03	—						
3. Well-being	3.82	0.72	.06	−.10	—					
4. Growth Opportunities	3.78	0.68	.06	−.09	.17*	—				
5. Workload	3.88	0.89	−.07	.33**	−.17*	−.12	—			
6. Lecturer Support	3.81	0.76	.02	−.19**	.21**	−.18*	−.18*	—		
7. AI Use	3.25	0.82	−.07	−.19**	.24**	.09	.21**	.40**	—	
8. Institutional Resources	3.31	1.08	−.05	−.23**	.45**	.30**	.45**	.45**	.45**	—

*Note. M = Mean; SD = Standard deviation. Pearson's r correlations; *p < .05, **p < .01.*

4.3. Differences in Student Well-Being and Stress by Demographic Variables

Analysis of differences in student well-being and stress across demographic variables revealed distinct patterns. For well-being, significant differences emerged by gender, with females reporting higher scores ($M = 4.10$, $SD = 0.61$) than males ($M = 3.85$, $SD = 0.68$), $t(193) = -3.02$, $p = .003$. Academic level also influenced well-being, $F(3,191) = 3.15$, $p = .026$, with PhD students reporting the highest well-being ($M = 4.20$, $SD = 0.55$), followed by master's ($M = 4.15$, $SD = 0.59$), undergraduate ($M = 3.95$, $SD = 0.63$), and diploma students ($M = 3.78$, $SD = 0.70$). Nationality had a significant effect, $F(2,192) = 3.74$, $p = .025$, with UAE nationals showing the highest well-being ($M = 4.10$, $SD = 0.61$), followed by GCC ($M = 3.91$, $SD = 0.66$) and international students ($M = 3.87$, $SD = 0.69$). Scholarship status did not significantly affect well-being ($p = .14$).

In contrast, stress levels did not differ significantly across any demographic variables. Males reported slightly lower stress levels ($M = 3.23$, $SD = 1.10$) than females ($M = 3.37$, $SD = 1.26$), and students with scholarships ($M = 3.28$, $SD = 1.28$) and those without scholarships ($M = 3.33$, $SD = 1.11$) had comparable stress levels. Similarly, stress was consistent across academic levels (Diploma $M = 3.26$, $SD = 1.45$; Undergraduate $M = 3.31$, $SD = 1.19$; Master's $M = 3.27$, $SD = 1.22$; PhD $M = 3.39$, $SD = 1.03$) and nationalities (UAE $M = 3.24$, $SD = 1.18$; GCC $M = 3.43$, $SD = 1.11$; International $M = 3.35$, $SD = 1.34$).

Overall, these findings suggest that demographic factors, such as gender, academic level, and nationality, have a significant impact on student well-being but no notable influence on stress levels. (See Table 3).

Table 3. Descriptive Statistics and Inferential Tests for Psychological Well-Being and Stress by Demographic Variables (N = 195)

		Wellbeing					**Stress**				
Variable	Group	M	SD	Test Statistic	df/N	p	M	SD	Test Statistic	df/N	p
Gender	Male (=1)	3.85	0.68	t = –3.02	193	.003*	3.23	1.10	t = -0.29	193	.776
	Female	4.10	0.61				3.37	1.26			
Scholarship	With (=1)	4.05	0.62	t = –1.48	193	.14	3.28	1.28	t = -0.29	193	.776
	Without	3.90	0.66				3.33	1.11			
Academic Level	Diploma (=1)	3.78	0.70	F = 3.15	3,191	.026*	3.26	1.45	F = 0.07	3,191	.977
	Undergraduate	3.95	0.63				3.31	1.19			
	Master's	4.15	0.59				3.27	1.22			
	PhD	4.20	0.55				3.39	1.03			
Nationality	UAE (=1)	4.10	0.61	F = 3.74	2,192	.025*	3.24	1.18	F = 0.47	2,192	.623
	GCC	3.91	0.66				3.43	1.11			
	International	3.87	0.69				3.35	1.34			

*Note. Independent samples t-tests for two-group variables; one-way ANOVA for multiple groups. *p < .05.*

4.4. Predictors of Stress and Well-Being

Multiple linear regression analyses were conducted to examine the extent to which academic pressures (workload) and institutional resources (AI use, growth opportunities, lecturer support, and institutional resources) predict student stress and well-being.

The regression model for stress was statistically significant, $F(6, 188) = 7.05$, $p < .001$, explaining 18.4% of the variance in stress ($R^2 = .184$). Workload emerged as the sole significant predictor of stress, with a positive relationship ($B = 0.388$, $\beta = 0.388$, $p < .001$). This finding suggests that as students' academic workload increases, their reported stress levels also rise significantly. The other variables AI uses, growth opportunities, lecturer support, and institutional resources, were not found to be statistically significant predictors of stress ($p > .05$) (see Table 5)

Table 4. Regression Coefficients Predicting Stress and Well-being (N = 195)

	Stress					**Wellbeing**				
Predictors	B	SE	β	t	p	B	SE	β	t	p
AI use	–0.016	0.066	–0.020	–0.240	.811	0.184	0.067	0.208	2.732	.007
Growth Opportunities	0.005	0.090	0.005	0.057	.955	–0.018	0.093	–0.016	–0.188	.851
Lecturer Support	0.018	0.157	0.018	0.115	.908	–0.030	0.071	–0.032	–0.419	.675
Institutional Resources	–0.050	0.068	–0.072	–0.740	.460	0.068	0.050	0.068	1.360	.174
Workload	0.388	0.049	0.388	5.489	<.001	–0.195	0.050	–0.147	–3.965	.003

A separate regression analysis for well-being produced a significant model, $F(5, 189) = 13.22$, $p < .001$, accounting for 25.9% of the variance in well-being ($R^2 = .259$). In this model, both AI use and workload were significant predictors. The use of AI was positively predicted by well-being ($B = 0.184$, $\beta = 0.208$, $p = .007$), suggesting that students who frequently use AI tools tend to have higher well-being. Conversely, workload negatively predicted well-being ($B = –0.195$, $\beta = –0.147$, $p = .003$), indicating that a greater academic workload is associated with reduced well-being. Growth opportunities, lecturer support, and institutional resources did not significantly predict well-being ($p > .05$) (see Table 4).

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5. Discussion

University students in the UAE are facing increasing academic demands, rapid technological changes, and inconsistent access to institutional support, all of which can affect their mental health (Alaila et al., 2024; Al-Shaer et al., 2024; Swidan et al., 2025). Using the SDR framework, this study examined the relationships among academic workload, institutional resources, and AI use, and their impact on student stress and well-being in higher education.

Our findings confirmed the strain pathway of the SDR model, revealing a significant negative correlation between academic workload and student well-being. Heavier workloads, tight deadlines, and demanding academic tasks were key stressors that diminished psychological health, consistent with prior research in the UAE (Alaila et al., 2024; Al Marzouqi et al., 2022). Students commonly face overlapping assignments, frequent exams, extensive reading requirements, group projects, and research-related tasks, all of which require sustained cognitive and emotional effort. These demands reduce opportunities for rest, recovery, and social engagement, which are essential for maintaining mental health. Furthermore, excessive academic workload was associated with higher levels of stress, as students expend substantial time and cognitive resources to meet requirements, often under strict deadlines. This persistent pressure can manifest as fatigue, anxiety, and reduced motivation, ultimately undermining well-being (Alalalmeh et al., 2023; Al-Shaer et al., 2024; Swidan et al., 2025).

In line with the SDR framework, our study also highlighted the role of AI as a valuable resource. Students who reported using AI effectively reported higher wellbeing. This means that using AI that follows instructions and ethical guidelines is likely to help students improve learning efficiency, engagement, and confidence (Badreya, 2024; Fowler, 2023; Russell & Norvig, 2020; Vieriu & Petrea, 2025), which, in turn, enhances their psychological well-being. This is consistent with a systematic review by Klimova and Pikhart (2025), who reported a positive relationship between AI use in higher education and student well-being. This might be because AI can provide personalized learning, adaptive pathways, and real-time feedback, hence reducing cognitive load and promoting self-efficacy as highlighted by some researchers (Badreya, 2024; Fowler, 2023; Russell & Norvig, 2020; Vieriu & Petrea, 2025). In the context of UAE universities, where AI adoption is accelerating, these tools seem to support students in academic demands and therefore foster motivation, resilience, and a more positive academic experience.

Conversely, our research found that the correlations between well-being and other institutional resources, such as growth opportunities, lecturer support, and counseling services, were not statistically significant. Several factors may explain these findings. First, students in our sample may have strong personal or family support networks, which buffer stress and reduce reliance on formal institutional resources (Chaudhry et al., 2024; Dhanabhakyam & Sarath, 2022). Second, although universities provide these services, students may not consistently use them due to a lack of awareness, perceived accessibility issues, or concerns about confidentiality and quality (Gaad & Almotairi, 2013a; Mathew & Ibrahim, 2023). For example, counseling services may exist but be overstretched, limiting timely support. Thus, while institutional resources are important, their perceived effectiveness or availability may not sufficiently enhance well-being for all students, consistent with previous UAE research showing variable engagement with available support (Al Marzouqi et al., 2022; Iyer & Shankar, 2024).

The demographic analysis revealed that female students reported higher psychological well-being than male students, whereas stress levels were comparable across genders. This is consistent with prior research in the UAE and beyond, which suggests that female students often have stronger social and emotional support networks and are more likely to utilize formal support services (Al-Shaer et al., 2024; Al Marzouqi et al., 2022). Cultural and socialization patterns may also contribute, as women are often encouraged to be more emotionally expressive and interconnected, fostering resilience and coping (Taylor et al., 2000). These findings mean that while workload and institutional factors broadly affect students, individual characteristics and personal support systems moderate their experiences of stress and well-being.

6. Conclusion

This study applied the SDR framework to examine how academic demands, institutional resources, and AI use shape university students' psychological stress and well-being in the UAE. Our study highlights that academic workload remains the primary demand affecting both stress and well-being, while the effective use of AI can serve as a significant resource to support students' psychological health. Institutional support mechanisms are valuable, but their impact depends on accessibility, utilization, and student engagement. These findings reinforce the SDR framework and suggest that higher education institutions in the UAE should combine workload management, effective AI integration, and improved student engagement with institutional resources to promote student well-being and reduce stress. Contrary to expectations, institutional resources such as lecturer support and developmental opportunities did not emerge as significant predictors of well-being.

The findings can offer several implications for higher education in the UAE. Our findings suggest that students' overall well-being in UAE universities can be strengthened through strategic policy initiatives that adopt an approach combining AI integration with strategic workload management. We therefore suggest that university leaders should leverage AI technologies to provide personalized learning support, automated feedback, and academic advising systems that alleviate cognitive burden and promote student engagement. At the same time, it is imperative to review academic workload structures to ensure that course and assessment demands remain rigorous yet manageable. Establishing institutional frameworks that promote AI literacy among students and faculty can further enhance the benefits of AI use, helping students use these tools ethically and effectively. We also note that although the study did not find a significant relationship between existing support services and student well-being, this result may point to problems with accessibility, awareness, or relevance rather than the value of these services. Therefore, we believe university leaders should critically examine the quality, visibility, and responsiveness of existing support mechanisms (e.g., lecturer support, growth opportunities, and university resources) and ensure that students are both aware of them and use them effectively to enhance their achievement and overall well-being.

The results of this paper should be considered in light of the following limitations, which can also guide future studies. The cross-sectional design prevents causal inferences, self-reported data may be biased, and the sample was drawn from a limited number of UAE institutions, reducing generalizability. Future research could employ longitudinal or mixed-method designs, expand samples across institutions, and refine measurement tools to better capture the quality, accessibility, and utilization of resources. Additionally, the lack of a significant relationship between study resources (faculty, peer support, and growth opportunities) and student wellbeing calls for further research on this issue. For example, future research should further investigate why this is the case by digging into the contextual factors that limit the effectiveness of institutional resources, including accessibility, trust, and cultural attitudes toward support services. They might also examine how institutional support can be made more accessible and credible, ensuring that students perceive it as a reliable complement to personal and technological resources. Finally, the convenience sampling approach also limits the generalizability of the results. Although the internal consistency of the adapted scales was strong, further validation with larger and more diverse samples is recommended.

Declarations

Author Contributions. R. D: Literature review, conceptualization, methodology, data analysis, review-editing and writing, original manuscript preparation. **M. B:** supervision, editing. All authors have read and approved the published version of the article.

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