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Integrated Wellness Needs of Saudi University Students: Mental Health as a Key Determinant of Lifestyle and Quality of Life

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Abstract

The transition to university is a critical period for establishing lifelong health habits, particularly in Saudi Arabia, where non-communicable diseases linked to lifestyle are increasingly prevalent. To address this, our study sought to comprehensively assess lifestyle behaviors, mental health status, and their combined impact on health-related quality of life (HRQoL) among students at King Khalid University. We conducted a cross-sectional study between September 2024 and February 2025, recruiting 865 undergraduates via a two-stage stratified random sampling technique. Data were collected using a validated online questionnaire that included the FANTASTIC lifestyle and EuroQol 5-Dimension 3-Level (EQ-5D-3L) instruments. Our study population exhibited a significant health burden; 37.6% were overweight or obese, 55.9% reported anxiety or depression, and 36.1% experienced pain or discomfort. Although the mean lifestyle score was generally positive, regression analysis revealed that anxiety/depression was the strongest predictor of a poorer lifestyle (OR = 2.94, 95% CI: 2.02–4.28). This study concludes that a profound negative association exists between mental health, lifestyle, and overall HRQoL, highlighting the urgent need for integrated wellness policies and support systems within the university setting to address these interconnected challenges.

Keywords: healthy lifestyle; mental health; health-related quality of life; university students; fantastic; EQ-5D-3L; Saudi Arabia; public health

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1. Introduction

Lifestyle, defined as the composite of an individual's daily habits and behaviors, is a primary determinant of long-term health and well-being. The World Health Organization (WHO) has established that unhealthy behaviors—such as poor dietary habits, physical inactivity, and inadequate stress management—are major modifiable risk factors for the global burden of non-communicable diseases (NCDs), including cardiovascular disease, type 2 diabetes, and certain cancers [1,2]. The Global Burden of Disease (GBD) 2021 study continues to highlight these behavioral factors as leading contributors to premature mortality and morbidity worldwide [3].

The university period is a critical developmental stage where young adults, often living independently for the first time, establish autonomy and form habits that persist throughout their lives [4,5].

The developmental phase separating adolescence from established adulthood, now identified as "emerging adulthood," has evolved into a notably prolonged and intricate period of the life course [6]. This extension is driven by modern pressures, such as the ubiquity of digital technology and pervasive economic instability, which fundamentally reconfigure traditional pathways to maturity. Digitalization alters the very nature of social connection and professional development, while economic volatility, exemplified by substantial student debt and unstable employment markets, systematically delays key milestones like financial autonomy. For young people navigating this landscape, often amidst wider global crises and unique demographic challenges, their perception of their own life trajectory is significantly affected, with crucial consequences for their mental health and future achievements.

The university experience serves as a powerful microcosm of this transition, requiring students to fundamentally recalibrate their priorities in response to a convergence of new academic, social, and personal responsibilities. Academically, the move from the highly supervised setting of secondary school to an environment demanding high levels of self-discipline and independent scholarship represents a formidable challenge. Socially, students must forge new networks after leaving established peer groups, transitioning into a more diverse community that can elicit feelings of both excitement and profound loneliness. Perhaps most transformative is the sudden assumption of personal autonomy, as students, often for the first time, must manage their own finances, healthcare, and daily logistics without direct familial guidance. This comprehensive transformation can permeate nearly every facet of a student's existence, from their daily habits to their foundational belief systems [7].

Consequently, the cumulative weight of these academic, social, and personal stressors poses a significant threat to students' health behaviors and lifestyle choices. When faced with sustained pressure, the cognitive capacity required for self-control and thoughtful decision-making is often diminished. This depletion prompts a gravitation towards convenience and immediate gratification over actions that support long-term well-being. This pattern manifests clearly in several areas, including the adoption of poor dietary habits, such as a reliance on energy-dense, nutrient-poor foods; a marked decline in physical activity as demanding schedules and mental exhaustion erode motivation; and the development of irregular sleep–wake cycles resulting from academic pressures and anxiety. This causal link between the stressors inherent in university life and the deterioration of healthy habits is well-established in the literature and is known to impair both academic success and overall health [8,9].

In the Kingdom of Saudi Arabia, rapid socioeconomic development has precipitated a well-documented nutritional and lifestyle transition. This shift, characterized by increased sedentary behaviors and consumption of energy-dense foods, has contributed to a rising prevalence of obesity and related NCDs, a trend that is increasingly apparent among youth [10,11]. This challenge aligns with the goals of Saudi Vision 2030, which emphasizes improving public health and promoting preventive care [12]. University students are at the forefront of this transition, making them a crucial target population for health promotion efforts [13].

Concurrently, there is growing recognition of the mental health challenges faced by university students globally [14]. High rates of stress, anxiety, and depression are prevalent in this population, driven by factors such as academic workload, social pressures, and future uncertainty [15]. Poor mental health is not an isolated issue; it is intrinsically linked

to physical health and lifestyle choices. For instance, depression is strongly associated with physical inactivity and poor diet quality [16,17], creating a vicious cycle that degrades overall health-related quality of life (HRQoL) [18].

While a growing body of research within Saudi Arabia has consistently highlighted concerning health trends among university students, such as suboptimal dietary habits and high rates of insufficient physical activity [19,20], these studies often examine such lifestyle factors in isolation, providing a fragmented view of student well-being. Consequently, a significant gap remains in the literature regarding a more holistic and integrated understanding of the student experience, particularly through a comprehensive analysis that simultaneously investigates the intricate relationships between lifestyle behaviors, mental health status, and overall HRQoL. This research gap is especially pronounced in the southern Asir province, a region with unique cultural dynamics whose university student population has been largely underrepresented in national health surveys. Therefore, this study aims to 1) assess healthy lifestyle patterns and BMI status; 2) evaluate the prevalence of mental health problems and overall HRQoL; and 3) identify the sociodemographic, lifestyle, and mental health factors that predict HRQoL among students at King Khalid University.

2. Materials and Methods

2.1. Study Design, Setting, and Period

A quantitative, cross-sectional study design was employed to assess the associations between lifestyle, mental health, and HRQoL at a single point in time. The study was conducted at King Khalid University (KKU), a major public university in Abha, Asir Province, Saudi Arabia. KKU serves a diverse student body of over 70,000 students from various socioeconomic and geographic backgrounds, enrolled in a wide range of scientific and literary disciplines, making it a suitable setting for this research. Data collection took place over a six-month period from September 2024 to February 2025 to capture a representative sample across a full academic semester.

2.2. Study Population and Sampling Strategy

The target population comprised all full-time undergraduate students officially registered at KKU for the 2024–2025 academic year. The sample size was calculated using Raosoft® software, setting a 5% margin of error, a 95% confidence level, and an estimated 50% prevalence of a "good" lifestyle based on the regional literature. This yielded a minimum required sample of 385. To compensate for the design effect of multi-stage sampling and to ensure adequate power for subgroup analyses, the target sample was increased by over 150% to 1060 students.

A two-stage stratified random sampling technique was employed to ensure a representative sample:

- Stage 1 (Stratification): The official university registrar's list of all colleges served as the sampling frame. Colleges were stratified into two mutually exclusive groups, "Health Colleges" (e.g., Medicine, Dentistry, Pharmacy, and Applied Medical Sciences) and "Non-Health Colleges" (e.g., Engineering, Science, Education, Business, and Humanities).
- Stage 2 (Random Selection): A proportionate number of students were selected from each stratum using a computer-generated simple random sampling algorithm.

Inclusion criteria were (1) being a registered full-time undergraduate student; (2) being 18 years of age or older; and (3) providing informed consent to participate. Students on an official leave of absence during the study period were excluded. Selected students were contacted via their official university email address, which contained a unique, non-

transferable link to the online questionnaire. Up to two reminder emails were sent at two-week intervals to non-responders to maximize the response rate.

2.3. Data Collection Instrument

A structured, self-administered online questionnaire was created using Google Forms and distributed in Arabic, the native language of the participants. The questionnaire was pilot-tested on 30 students (not included in the final sample) to ensure clarity, flow, and cultural appropriateness. The instrument consisted of four sections:

- Part 1: Sociodemographic and Anthropometric Data: This section collected data on age, gender, college type, marital status, and monthly family income. The age variable was stratified into three groups (18–20, 21–23, and ≥24 years) to reflect distinct developmental phases within the university experience. The 18–20 group represents the initial transition to university life and autonomy; the 21–23 group aligns with a later stage focused on academic consolidation and career anticipation; and the ≥24 category isolates a senior or non-traditional cohort with different life experiences. Monthly family income was categorized into three groups: <SAR 15,000, SAR 15,000–25,000, and >SAR 25,000. These thresholds correspond to approximately <USD 4000, USD 4000–6667, and >USD 6667, respectively. This conversion is based on the stable exchange rate at which the Saudi Riyal (SAR) is officially pegged to the US Dollar (SAR 3.75 to USD 1). The income cutoff of <SAR 15,000 was chosen based on national survey data to approximate the median household income [21]. Self-reported height (in cm) and weight (in kg) were used to calculate Body Mass Index (BMI), categorized according to WHO standards (underweight <18.5; normal 18.5–24.9; overweight 25.0–29.9; and obese ≥30.0 kg/m^2) [22].
- Part 2: Lifestyle Assessment: To assess a broad range of lifestyle behaviors, this study utilized the 25-item FANTASTIC Lifestyle Questionnaire, originally developed by Wilson and Ciliska [23]. The instrument's enduring utility and robust psychometric properties are well-documented, with systematic reviews underscoring its reliability and adaptability across diverse populations [24,25]. Its validity has been confirmed in numerous university contexts, including in Spain [26], Brazil [27], and Portugal [28]. As no previously Arabic version was available for our population, our research team undertook a rigorous cross-cultural adaptation process. This involved a forward translation from English to Arabic by two independent bilingual experts, a synthesis review by an expert committee, a blind back-translation into English, and a final reconciliation to ensure conceptual equivalence. The resulting Arabic instrument was then pre-tested with 30 university students to confirm item clarity and cultural relevance for the Saudi context. The final instrument demonstrated good internal consistency within our sample (Cronbach's $\alpha = 0.78$). Scores range from 0 to 100 and are categorized as Excellent (85–100), Very Good (70–84), Good (55–69), Fair (40–54), and Needs Improvement (0–39). For analytical purposes, these were collapsed into three groups: "Excellent/Very Good", "Good", and "Fair/Needs Improvement".
- Part 3: Health-Related Quality of Life (HRQoL): The EuroQol 5-Dimension 3-Level (EQ-5D-3L) instrument was used [29]. The validated Arabic version [30] measures HRQoL across five dimensions (Mobility, Self-Care, Usual Activities, Pain/Discomfort, and Anxiety/Depression), with three severity levels (no problems, some problems, and extreme problems). For bivariate analysis, these were dichotomized into "No problems" and "Some/Extreme problems". The instrument also includes a Visual Analogue Scale (EQ-VAS), where respondents rate their overall health from 0 (worst imaginable) to 100 (best imaginable).

2.4. Ethical Considerations

The study protocol was approved by the Institutional Review Board (IRB) of King Khalid University and was conducted in accordance with the Declaration of Helsinki. An information page preceded the questionnaire, explaining the study's purpose, the voluntary nature of participation, and assuring participants of the confidentiality and anonymity of their data. It was made clear that participants could withdraw at any time without penalty.

2.5. Statistical Analysis

Data were coded and analyzed using IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics (means, standard deviations [SD], frequencies, percentages, and 95% confidence intervals [CI]) were used to summarize all variables. Bivariate analyses were conducted using the chi-squared (χ^2) test to assess associations between categorical variables. To correct for the risk of Type I errors from multiple comparisons in the analysis of lifestyle categories against the five EQ-5D dimensions, a Bonferroni-adjusted p-value threshold of $p < 0.01$ was considered statistically significant.

A multinomial logistic regression model was built to identify predictors of lifestyle. The "Good" lifestyle category was chosen as the reference category as it represented the modal (most frequent) group, allowing for meaningful comparisons with both superior ("Excellent/Very Good") and inferior ("Fair/Needs Improvement") lifestyle categories. The model building was guided by the Socio-Ecological Model, entering variables in a hierarchical fashion; Block 1 contained core sociodemographic variables (gender, college type, and income), Block 2 added the key physical health variable (BMI category), and Block 3 added the mental health dimension (Anxiety/Depression from EQ-5D). Variables such as mother's and father's education, which were significant in the bivariate analysis, were tested in the initial model but were found to be non-significant after controlling for other covariates and were therefore removed from the final parsimonious model. Assumption checking was performed; multicollinearity was assessed using the Variance Inflation Factor (VIF), with all variables having a VIF < 2.0, indicating no issues. The Hosmer–Lemeshow test indicated good model fit ($p > 0.05$). Potential interaction effects (e.g., gender × anxiety) were tested but were not significant and, thus, excluded from the final parsimonious model. A p-value of < 0.05 was considered statistically significant for the regression analysis.

3. Results

3.1. Participant Characteristics

Of the 1060 students invited, 865 completed the questionnaire, yielding a response rate of 81.6%. The demographic, socioeconomic, and anthropometric characteristics of the participants are detailed in Table 1. The mean age of participants was 21.8 (±2.9) years, with the largest group (46.2%) being 18–20 years old, followed by the 21–23 age group (42.2%). The sample was fairly balanced by gender, with slightly more females (52.5%) than males (47.5%). The majority of students were enrolled in non-health colleges (64.3%) and were single (88.1%). A significant majority (68.4%) reported a monthly family income of less than SAR 15,000, with 22.1% earning between SAR 15,000–25,000 and 9.5% earning over SAR 25,000. With regard to weight status, just over half of the students (54.8%) were of normal weight. However, a combined 37.6% (95% CI: 35.3–41.9%) were classified as overweight (26.2%) or obese (11.3%), indicating a substantial prevalence of excess weight in this population.

Table 1. Sociodemographic and BMI characteristics of study participants (n = 865).

Characteristic	Category	*n* (%)
Age (years)	18–20	400 (46.2)
	21–23	365 (42.2)
	≥24	100 (11.6)
Gender	Male	411 (47.5)
	Female	454 (52.5)
College Type	Health Colleges	309 (35.7)
	Non-Health Colleges	556 (64.3)
Mother's Education	Illiterate/Primary	181 (20.9)
	Intermediate/Secondary	344 (39.8)
	Bachelor's or Higher	340 (39.3)
Father's Education	Illiterate/Primary	133 (15.4)
	Intermediate/Secondary	371 (42.9)
	Bachelor's or Higher	361 (41.7)
Monthly Family Income (SAR)	<15,000	592 (68.4)
	15,000–25,000	191 (22.1)
	>25,000	82 (9.5)
BMI Category (kg/m^2)	Underweight (<18.5)	66 (7.6)
	Normal weight (18.5–24.9)	474 (54.8)
	Overweight (25.0–29.9)	227 (26.2)
	Obese (≥30.0)	98 (11.3)

3.2. Lifestyle and HRQoL Assessment

The overall mean FANTASTIC lifestyle score for the cohort was 68.9 (SD = 12.5), falling into the "Good" category. The distribution of lifestyle categories was as follows: Excellent (8.7%), Very Good (24.8%), Good (41.3%), Fair (22.1%), and Needs Improvement (3.1%). The mean self-rated health score on the EQ-VAS was 81.4 (SD = 16.2), indicating a generally positive perception of health. A significant positive correlation was observed between the total FANTASTIC score and the EQ-VAS score (Spearman's r = 0.53, $p < 0.001$), suggesting that better lifestyle habits are strongly linked with higher self-rated health.

Figure 1 provides a detailed breakdown of the mean scores for each of the nine FANTASTIC lifestyle domains, presented as a percentage of the maximum possible score. The analysis revealed several domains where students are facing significant challenges. The lowest-scoring domain was career satisfaction (50.0%), followed closely by sleep, stress, and seatbelt use (54.2%) and physical activity (56.2%). Other areas indicating a need for substantial improvement included nutrition (62.5%), insight (62.5%), and type of person (68.8%). Conversely, students scored highest in areas of social support and substance avoidance. Both Family & Friends and Tobacco & Toxins scored 87.5%. The highest-scoring domain was alcohol avoidance at 98.8%.

Table 2 presents the distribution of responses on the EQ-5D-3L dimensions. While the majority of students reported no problems with mobility (91.1%), self-care (96.5%), and usual activities (89.6%), a substantial proportion reported experiencing health issues in other domains. Over one-third of the students (36.1%) reported having some or extreme problems with pain/discomfort. Most notably, a majority of the students (55.9%; 95% CI: 52.5–59.3%) reported experiencing problems with anxiety/depression, highlighting a significant mental health burden in this population.

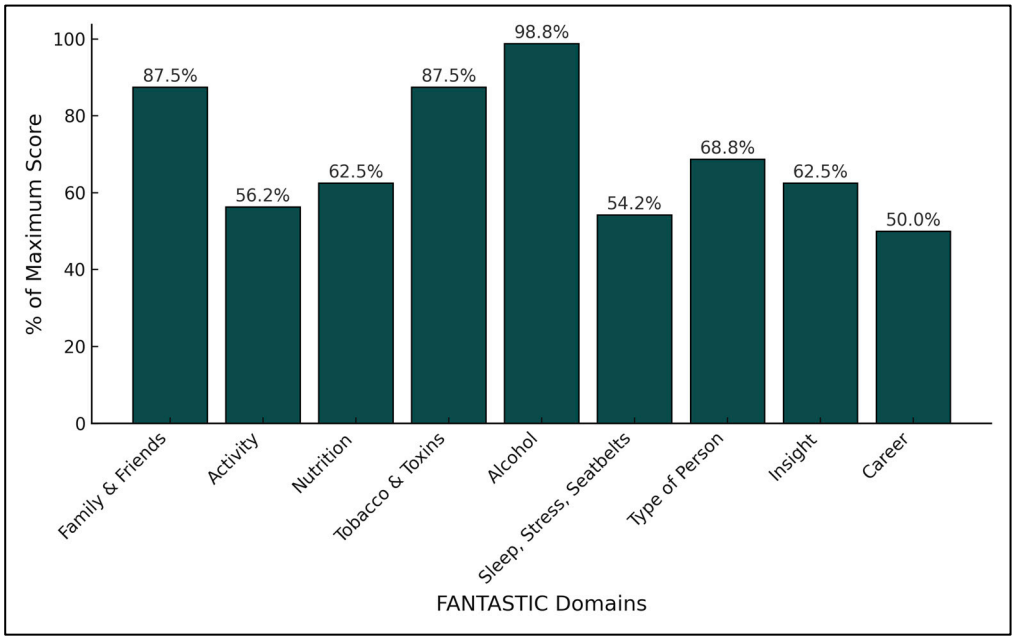


Figure 1. Percentage of maximum score for FANTASTIC lifestyle domains (n = 865).

Table 2. Distribution of responses to EQ-5D-3L dimensions (n = 865).

Dimension	Level	*n* (%)	95% Confidence Interval
Mobility	No problems	788 (91.1)	89.1–92.8%
	Some/Extreme problems	77 (8.9)	7.2–10.9%
Self-Care	No problems	835 (96.5)	95.1–97.6%
	Some/Extreme problems	30 (3.5)	2.4–4.9%
Usual Activities	No problems	775 (89.6)	87.4–91.5%
	Some/Extreme problems	90 (10.4)	8.5–12.6%
Pain/Discomfort	No problems	553 (63.9)	60.6–67.1%
	Some/Extreme problems	312 (36.1)	32.9–39.4%
Anxiety/Depression	No problems	382 (44.1)	40.7–47.5%
	Some/Extreme problems	483 (55.9)	52.5–59.3%

3.3. Association Between Variables and Lifestyle

The results of the chi-squared analysis investigating the association between participant characteristics and the three lifestyle categories are presented in Table 3. A statistically significant association was found between lifestyle category and college type ($p < 0.001$). Specifically, a higher proportion of students from health colleges (38.8%) were in the "Excellent/Very Good" category compared to students from non-health colleges (30.6%). Significant associations were also found with both the pain/discomfort ($p < 0.001$) and anxiety/depression ($p < 0.001$) dimensions of the EQ-5D-3L. For anxiety/depression, nearly half (47.4%) of the students with no problems were in the "Excellent/Very Good" lifestyle category, whereas only 22.6% of those with problems fell into this top tier. Conversely, a third (33.5%) of students with anxiety/depression problems were in the poorest lifestyle category, compared to just 14.7% of those without such problems. No statistically significant associations were found between lifestyle category and gender, age, family income, or BMI category in the bivariate analysis.

Table 3. Association between participant characteristics and lifestyle categories (n = 865).

Variable	Lifestyle: Excellent/Very Good (n = 290)	Lifestyle: Good (n = 357)	Lifestyle: Fair/Needs Improvement (n = 218)	p-Value
Mother's Education				0.028
Illiterate/Primary	51 (28.2)	71 (39.2)	59 (32.6)	
Intermediate/Secondary	109 (31.7)	149 (43.3)	86 (25.0)	
Bachelor's or Higher	130 (38.2)	137 (40.3)	73 (21.5)	
Father's Education				0.155
Illiterate/Primary	39 (29.3)	58 (43.6)	36 (27.1)	
Intermediate/Secondary	115 (31.0)	159 (42.9)	97 (26.1)	
Bachelor's or Higher	136 (37.7)	140 (38.8)	85 (23.5)	
College Type				**<0.001**
Health	120 (38.8)	135 (43.7)	54 (17.5)	
Non-Health	170 (30.6)	222 (39.9)	164 (29.5)	
Anxiety/Depression				**<0.001**
No problems	181 (47.4)	145 (38.0)	56 (14.7)	
Problems	109 (22.6)	212 (43.9)	162 (33.5)	

Significance based on χ^2 test. Bold indicates $p < 0.01$.

3.4. Predictors of Lifestyle

The results of the final multinomial logistic regression model predicting lifestyle category are presented in Table 4. When comparing the "Excellent/Very Good" category to the reference "Good" category, being male (OR = 1.58, 95% CI: 1.11–2.25) and being enrolled in a health college (OR = 1.65, 95% CI: 1.14–2.39) were significant predictors of a better lifestyle. Reporting problems with anxiety/depression significantly reduced the odds of being in the top lifestyle category (OR = 0.46, 95% CI: 0.31–0.67). When comparing the "Fair/Needs Improvement" category to the "Good" category, anxiety/depression was the only significant predictor. Students reporting problems with anxiety/depression had nearly three times the odds of being in the poorest lifestyle category compared to those with no such problems (OR = 2.94, 95% CI: 2.02–4.28).

Table 4. Multinomial logistic regression predicting lifestyle category.

Predictor	Comparison	Odds Ratio (OR)	95% C.I.	p-Value
Gender (Male vs. Female)	Excellent/Very Good vs. Good	1.58	1.11–2.25	**0.012**
College (Health vs. Non-Health)		1.65	1.14–2.39	**0.008**
BMI (Overweight/Obese vs. Normal)		0.91	0.65–1.27	0.580
Anxiety/Depression (Problems vs. No Problems)		0.46	0.31–0.67	**<0.001**
Gender (Male vs. Female)	Fair/Needs Improvement vs. Good	0.91	0.64–1.29	0.589
College (Health vs. Non-Health)		0.85	0.60–1.21	0.368
BMI (Overweight/Obese vs. Normal)		1.03	0.75–1.43	0.852
Anxiety/Depression (Problems vs. No Problems)		2.94	2.02–4.28	**<0.001**

Reference categories: Good Lifestyle; Female; Non-Health College; Normal BMI; No Problems with Anxiety/Depression. Bold indicates $p < 0.05$.

4. Discussion

This study identifies a critical dual health burden among university students in Saudi Arabia, a high prevalence of overweight/obesity co-existing with alarming rates of self-reported anxiety and depression. While students reported generally "Good" lifestyle scores, the statistically significant negative association between poor mental health and

both lifestyle and health-related quality of life (HRQoL) represents the most pressing public health challenge in this cohort.

On the physical health front, the prevalence of overweight and obesity (37.6%) is a significant concern, aligning with or exceeding figures from regional studies and confirming the establishment of this NCDs risk factor in the young adult population [11,31]. Furthermore, a substantial proportion (36%) reported pain or discomfort, a finding consistent with other studies on student populations that link such symptoms to the sedentary and high-stress nature of academic life [32–37].

The most striking finding in the current study, however, is the high prevalence of self-reported anxiety or depression, affecting a majority of students (55.9%). This rate surpasses those in some previous Saudi studies and reflects the global escalation of mental health challenges among university students post-COVID-19 [14,38]. This issue is a formidable barrier to academic success and the development of a resilient future workforce, demanding urgent policy attention.

Our regression analysis identified poor mental health as the most powerful predictor of an unhealthy lifestyle. This reinforces the concept of a detrimental feedback loop, wherein psychological distress promotes unhealthy coping behaviors (e.g., poor diet and inactivity), which, in turn, exacerbate mental health problems and degrade HRQoL [16,18]. The statistical link was potent; students with anxiety/depression had nearly triple the odds of a poor lifestyle, while their odds of an excellent lifestyle were halved. This highlights the limited efficacy of addressing physical health behaviors in isolation from robust mental health support.

The finding that students in health colleges exhibited better lifestyles underscores the protective role of health literacy [20,39] and suggests a clear intervention pathway, implementing mandatory, practical health education across all university disciplines. Similarly, the observation that male students reported better lifestyles, possibly reflecting sociocultural factors influencing physical activity [19], highlights the need for universities to promote and ensure equitable access to culturally appropriate recreational facilities for female students.

Beyond these targeted initiatives, addressing the profound link between mental health and lifestyle requires a systemic, integrated care model. The Stepped Care Model (SCM) presents a suitable framework. As a patient-centered approach that organizes services from low to high intensity based on need, the SCM is an effective model for delivering primary mental health care [40]. Its structure—initiating care with low-intensity interventions like digital wellness tools before "stepping up" to formal therapy—is highly applicable to the university context. It can provide broad support to the large proportion of students in distress while reserving specialized resources for those with the most severe needs.

Several limitations must be acknowledged. First, the cross-sectional design establishes strong associations but cannot infer causality. Second, the reliance on self-reported data, including for BMI calculation, introduces potential recall and social desirability biases. Third, being a single-institution study, the findings from KKU may have limited generalizability to all Saudi universities. Finally, our measure of anxiety/depression, derived from the EQ-5D-3L, captures self-perception rather than formal clinical diagnoses. It does not differentiate between new-onset and chronic conditions, a distinction that warrants investigation in future studies.

5. Conclusions

The health and well-being of university students represent a critical investment in the future of a nation. This study reveals that, while students at KKU have some lifestyle strengths, these are substantially compromised by significant challenges in nutrition, phys-

ical activity, and, particularly concerning, mental health. The powerful negative association of poor mental health with both lifestyle and quality of life suggests the need for a paradigm shift in university health policy, moving from a reactive to a proactive and integrated model by implementing a tailored SCM for student wellness. Such a framework would establish an integrated system of support, beginning with universal, low-intensity services and providing clear pathways to "step up" to individualized therapy for students who require it.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author due to ethical approval requirements.

Conflicts of Interest: The authors declare no conflicts of interest.

Abbreviations

The following abbreviations are used in this manuscript:

BMI	Body Mass Index
EQ-5D-3L	EuroQol 5-Dimension 3-Level
FANTASTIC	FANTASTIC Lifestyle Questionnaire
GBD	Global Burden of Disease
HRQoL	Health-Related Quality of Life
IRB	Institutional Review Board
KKU	King Khalid University
NCDs	Non-Communicable Diseases
SCM	Stepped Care Model
WHO	World Health Organization

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