

Evaluation of Healthy Lifestyle Beliefs among Students at the University of Mosul, Iraq

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ABSTRACT

A healthy lifestyle is not a static trait but a multidimensional, evolving construct shaped by individual choices, socio-environmental influences, and institutional structures. The aim of objective to evaluate of healthy lifestyle beliefs among students at the university of Mosul, Iraq. A cross-sectional, non-experimental quantitative study design was used to accomplish the study's aim and objectives. From October 15, 2025, to December 20, 2025. The study was conducted at the university of Mosul in the left side of Mosul City. The study sample consisted of 660 undergraduate students who were selected from the University of Mosul using a simple random sampling technique. The questionnaire consists of Two main sections, each serving a distinct methodological and theoretical purpose. Section one: Socio-demographic Characteristics. The second section was Beliefs toward Healthy Lifestyle this subdomain assesses of a healthy lifestyle, including physical activity, healthy nutrition, adequate sleep, and psychosocial aspects. The students' beliefs in many aspects were positive. The results of funding the age, nearly half of the participants were aged 21–23 years (49%), representing the largest age group. Participants aged 18–20 years and 24–26 years each accounted for 25% of the sample, while those aged 27 years and above represented only 1%. In terms of body mass index (BMI), more than half of the respondents were classified as having a normal weight (53%), followed by overweight participants (43%). A small proportion of the sample was underweight (4%). The study concluded that the findings across demonstrate that the study participants generally exhibit positive health-related lifestyle behaviors across all examined dimensions. High overall mean scores and relative importance indices for physical activity, healthy nutrition, and healthy sleep indicate strong awareness and favorable practices in these areas.

Keywords: Evaluation , healthy lifestyle, beliefs.

INTRODUCTION

A healthy lifestyle among university students represents a dynamic constellation of modifiable behaviors that collectively foster physical, psychological, and social well-being¹. Conceptually, it transcends the mere absence of disease and embodies an active, intentional engagement in habits that enhance quality of life, academic performance, and long-term health outcomes^{2,3}. The university setting constitutes a critical developmental window during which lifelong health patterns are either established or disrupted; thus, understanding and promoting healthy lifestyle behaviors during this period is of paramount public health importance^{4,5}. Within this context, a healthy lifestyle is not a static trait but a multidimensional, evolving construct shaped by individual choices, socio-environmental influences, and institutional structures^{6,7}.

The holistic nature of health encompassing physical activity, nutrition, sleep patterns, and psychosocial well-being is foundational to contemporary conceptualizations of healthy lifestyles in higher education^{8,9}. These domains are interdependent: deficits in one often exacerbate vulnerabilities in others, while improvements in one may produce cascading positive effects across the system¹⁰. This integrative perspective aligns with the bio psychosocial model of health, which recognizes that biological, psychological, and social factors interact dynamically to shape health trajectories^{11,12}. Below, each component is delineated with reference to its definition, empirical significance, and relevance to university students.

Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure above resting levels¹³⁻¹⁵. For university students, regular engagement in moderate-to-

vigorous physical activity (MVPA) confers multiple benefits, including enhanced cardiovascular fitness, improved mood regulation, reduced academic stress, and better cognitive functioning¹⁶⁻¹⁸. Nutrition, as a pillar of healthy lifestyle behavior, refers to the consistent consumption of a balanced, varied diet that meets energy and micronutrient requirements while minimizing intake of ultra-processed foods, added sugars, and saturated fats¹⁹. Among university students, dietary patterns are frequently characterized by irregular meal timing, high consumption of fast food, and low intake of fruits and vegetables a shift often termed the “nutrition transition”^{20,21}. Poor dietary habits are strongly associated with increased risk of obesity, metabolic syndrome, and mental health challenges such as anxiety and depression^{22,23}.

Conversely, adherence to dietary patterns rich in whole grains, lean proteins, and plant-based foods correlates with higher academic achievement and improved psychological resilience^{24,25}. Sleep is a biological necessity that plays a restorative role in cognitive, emotional, and physiological functioning. In the university context, healthy sleep patterns are defined by sufficient duration (7–9 hours per night for young adults), good subjective quality, regularity in timing, and minimal daytime dysfunction²⁶. The psychosocial dimension encompasses stress management, emotional regulation, social connectedness, and perceived support factors that significantly moderate the adoption and maintenance of other healthy behaviors²⁷. University students face unique psychosocial stressors, including academic pressure, financial insecurity, identity exploration, and social adjustment, all of which can erode mental health if not buffered by coping resources^{28,29}.

The importance of this study lies in its timely investigation of university students' readiness to adopt healthy lifestyle behaviors at

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Mosul University, a critical population segment that represents both the current and future human capital of Iraq. University students globally demonstrate alarming rates of unhealthy behaviors, with research indicating that over 60% fail to meet WHO physical activity guidelines and 80.5% exhibit inadequate fruit and vegetable consumption³⁰⁻³³. The aim of the study to evaluation of healthy lifestyle beliefs among students at the university of Mosul, Iraq.

MATERIALS AND METHODS

Study design: A cross-sectional, non-experimental quantitative study design was used to accomplish the study's aim and objectives. From October 15, 2025, to December 20 , 2025.

Setting of the study: The study was conducted at the university of Mosul in the left side of Mosul city.

Sample size and participants: The study sample consisted of 660 undergraduate students who were selected from the University of Mosul using a simple random sampling technique. The total sample size was calculated and 5% of the total sample size participating in the study was selected. This sampling method was adopted to ensure that every undergraduate student had an equal and independent chance of being included in the study, thereby minimizing selection bias and enhancing the representativeness of the sample. Participants were recruited

from different colleges within the university to reflect the diversity of academic disciplines and student backgrounds. The inclusion criteria were limited to regular undergraduate students enrolled in morning study programs during the academic year, as this group represents the primary population of interest for the objectives of the study.

Data collection tool: The questionnaire consists of Two main sections, each serving a distinct methodological and theoretical purpose. Section one: Socio-demographic Characteristics: The first section collects detailed socio-demographic and academic information about the participants. This includes age, gender, marital status, academic stage, college category, body mass index (BMI), housing status, parents' educational level, occupation of the head of the household, and monthly family income. The second section was Beliefs toward Healthy Lifestyle this subdomain assesses of a healthy lifestyle, including physical activity, healthy nutrition, adequate sleep, and psychosocial aspects .

Statistical procedure: A range of statistical methods were used to test the questionnaire, verify correlations and influences between the axes, and test for differences. These methods were employed using the SPSS version 27 and AMOS version 24 statistical software programs, as follows:(Duplicates, Percentages, Mean, Standard Deviation).

RESULTS

Table 1. Frequencies, percentages, arithmetic means, standard deviations, and relative importance of the physical activity dimension.

Items	Response scale										Mean	Standard deviation	Relative importance index	Rank
	Strongly agree (5)		Agree		Neutral		Disagree		Strongly disagree					
			-4		-3		-2		-1					
	No	%	No	%	No	%	No	%	No	%				
A11	238	36.06	270	40.91	104	15.76	46	6.97	2	0.3	4.05	0.91	0.811	1
A12	219	33.18	260	39.39	130	19.7	49	7.42	2	0.3	3.98	0.92	0.795	3
A13	123	18.64	205	31.06	204	30.91	90	13.64	38	5.76	3.43	1.11	0.686	4
A14	239	36.21	258	39.09	111	16.82	50	7.58	2	0.3	4.03	0.93	0.807	2
Overall mean		31.02		37.61		20.8		8.9		1.67	3.87	0.97	0.775	
Total	68.63				20.8		10.57							

A11:Engaging in physical exercise makes me feel healthier.,A12: Physical activity helps improve my mood and reduce stress.,A13: I believe that exercising is a waste of time given my academic workload,A14: Physical activity enhances my academic concentration ability

Table 2. Frequency distributions, arithmetic means, standard deviations, and relative importance of the healthy nutrition dimension

Items	Response scale										Mean	Standard deviation	Relative importance index	Rank
	Strongly agree (5)		Agree		Neutral		Disagree		Strongly Disagree					
			-4		-3		-2		-1					
	No	%	No	%	No	%	No	%	No	%				
A21	298	45.15	260	39.39	80	12.12	12	1.82	10	1.52	4.25	0.85	0.85	2
A22	183	27.73	282	42.73	165	25	18	2.73	12	1.82	3.92	0.89	0.784	3
A23	150	22.73	279	42.27	195	29.55	28	4.24	8	1.21	3.81	0.88	0.762	4
A24	322	48.79	238	36.06	84	12.73	14	2.12	2	0.3	4.31	0.8	0.862	1
Overall mean		36.1		40.11		19.85		2.73		1.21	4.07	0.85	0.814	
Total	76.21					19.85		3.94						

A21:Consuming healthy food provides me with greater energy for daily activities.,A22: Fast food is a practical option given academic demands, A23: Healthy food is financially costly, A24: Drinking sufficient water helps maintain my mental alertness.

Table 3. Frequencies, percentages, arithmetic means, standard deviations, and relative importance of the healthy sleep dimension

Items	Response scale										Mean	Standard deviation	Relative importance index	rank
	Strongly agree (5)		Agree		Neutral		Disagree		Stronglydisagree					
			-4		-3		-2		-1					
	N	%	N	%	N	%	N	%	N	%				
A31	284	43.03	278	42.12	77	11.67	16	2.42	5	0.76	4.24	0.81	0.848	2
A32	174	26.36	256	38.79	155	23.48	55	8.33	20	3.03	3.77	1.03	0.754	4
A33	270	40.91	270	40.91	93	14.09	24	3.64	3	0.45	4.18	0.84	0.836	3
A34	300	45.45	267	40.45	76	11.52	10	1.52	7	1.06	4.28	0.81	0.855	1
Overall mean		38.94		40.57		15.19		3.98		1.33	4.12	0.87	0.824	
total	79.51				15.19		5.3							

A31: Adequate sleep improves my performance during lectures, A32: Staying up late to study is necessary and cannot be compensated, A33: Maintaining regular sleep schedules enhances the quality of my university life., A34: I believe that good sleep helps regulate my emotions and reactions.

Table 4. Frequencies, percentages, arithmetic means, standard deviations, and relative importance of the mental and social health dimension

Items	Response scale										Mean	standard deviation	Relative importance index	Rank
	Strongly agree(5)		Agree		Neutral		Disagree		Strongly disagree					
			-4		-3		-2		-1					
	N	%	N	%	N	%	N	%	N	%				
A41	245	37.12	253	38.33	92	13.94	50	7.58	20	3.03	3.99	1.04	0.798	1
A42	224	33.94	243	36.82	110	16.67	49	7.42	34	5.15	3.87	1.12	0.774	4
A43	213	32.27	263	39.85	105	15.91	57	8.64	22	3.33	3.89	1.06	0.778	3
A44	227	34.39	264	40	84	12.73	60	9.09	25	3.79	3.92	1.08	0.784	2
Overall mean		34.43		38.75		14.81		8.18		3.83	3.92	1.08	0.784	
Total	73.18				14.81		12.01							

A41: Paying attention to my mental health is as important as caring for my physical health, A42: Positive social relationships contribute to improving my overall health, A43: I believe that seeking psychological help when needed reflects awareness rather than weakness, A44: Engaging in hobbies and recreational activities is essential for maintaining psychological balance.

DISCUSSION

The results in Table (1) indicate that the physical activity dimension achieved a high overall mean score ($M = 3.87$) with a relative importance index of 0.775, reflecting a generally positive level of physical activity among respondents. The high proportion of “strongly agree” and “agree” responses (68.63%) suggests that most participants acknowledge the importance of physical activity and engage in behaviors supporting it. Item A11 ranked first ($M = 4.05$, $RII = 0.811$), indicating strong agreement and highlighting this item as the most representative of physical activity behaviors. Similarly, Items A14 and A12 also recorded high mean scores, confirming consistency across most physical activity indicators. In contrast, Item A13 ranked last ($M = 3.43$, $RII = 0.686$), with a relatively higher standard deviation, suggesting variability in respondents’ engagement in this specific activity, possibly due to time constraints, lack of facilities, or personal motivation^{34,35}. These findings are consistent with previous studies emphasizing that while individuals often recognize the importance of physical activity, actual participation levels may vary depending on environmental and personal factors^{36,37}. The World Health Organization also highlights physical activity as a cornerstone of disease prevention and health promotion³⁸.

Table (2) shows that the healthy nutrition dimension recorded a high overall mean ($M = 4.07$) and a relative importance index of 0.814, indicating a strong commitment to healthy dietary behaviors among respondents. More than three-quarters of participants selected “strongly agree” or “agree,” reflecting widespread awareness of healthy nutrition principles. Item A24 ranked first ($M = 4.31$, $RII = 0.862$), demonstrating the highest level of agreement, which suggests that respondents are particularly attentive to this nutritional behavior. Item A21 also showed a high level of endorsement ($M = 4.25$), while Items A22 and A23 ranked lower but remained within the high agreement range^{39,40}. The relatively low standard deviations across items indicate homogeneity in responses, suggesting consistent dietary awareness among participants. These results align with prior research indicating that increased nutritional knowledge positively influences food choices and long-term health outcomes⁴¹⁻⁴⁴. Moreover, healthy nutrition is widely recognized as a key determinant in preventing chronic diseases such as obesity, diabetes, and cardiovascular disorders⁴⁵.

As shown in Table (3), the healthy sleep dimension achieved a high overall mean score ($M = 4.12$) and a relative importance index of 0.824, reflecting favorable sleep-related behaviors among the respondents.

The majority of participants reported agreement with statements related to adequate and regular sleep. Item A34 ranked first ($M = 4.28$, $RII = 0.855$), followed closely by Item A31 ($M = 4.24$), indicating that respondents recognize the importance of sufficient sleep duration and quality^{45,46}. Item A32 recorded the lowest mean ($M = 3.77$) and the highest standard deviation, suggesting individual differences in sleep habits, possibly influenced by academic, occupational, or social pressures⁴⁷. These findings are supported by previous literature emphasizing the critical role of sleep in physical recovery, cognitive functioning, and emotional regulation⁴⁸⁻⁵⁰. Inadequate sleep has been linked to reduced academic and work performance, as well as increased risk of mental and physical health problems.

Table (4) reveals that the mental and social health dimension achieved a moderately high overall mean ($M = 3.92$) with a relative importance index of 0.784, indicating generally positive mental and social well-being among respondents. The majority of responses clustered around the “agree” and “strongly agree” categories. Item A41 ranked first ($M = 3.99$, $RII = 0.798$), reflecting strong perceptions of psychological and social stability. Items A44 and A43 followed closely, while Item A42 ranked last ($M = 3.87$), showing relatively lower agreement and greater variability, which may reflect differences in coping strategies, social support systems, or stress levels⁵¹. These results align with previous research suggesting that mental and social health is closely linked to lifestyle behaviors, social relationships, and environmental stressors⁵². Positive mental health is also associated with better physical health outcomes and increased life satisfaction.

CONCLUSION

In conclusion, the findings across demonstrate that the study participants generally exhibit positive health-related lifestyle behaviors across all examined dimensions. High overall mean scores and relative importance indices for physical activity, healthy nutrition, and healthy sleep indicate strong awareness and favorable practices in these areas, while the mental and social health dimension showed a moderately high level, reflecting generally positive psychological and social well-being. Among the four dimensions, healthy sleep and nutrition emerged as the most strongly endorsed behaviors, whereas physical activity and mental and social health showed greater variability across specific items.

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