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## **Health Behavior and Life Satisfaction of University Students: A Comparative Study Using Optimal Living Profile-Modified**

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### **ABSTRACT**

*This study explores the well-being and life satisfaction of university students in Hungary and Jordan and compares Hungarian students, Jordanian students in Hungary, and Jordanian students in Jordan. Data from 485 students using the Optimal Living Profile-Modified questionnaire revealed significant differences in life satisfaction, with Jordanian students reporting the highest levels. The well-being analysis revealed lower well-being among Hungarian students. Health behavior analysis revealed better physical activity, nutrition, and sleep quality*

among Jordanian students in Hungary compared to Hungarian students, whereas smoking was more prevalent among Jordanian students in Jordan. The study revealed positive correlations between health behaviors, well-being, and life satisfaction, emphasizing the influence of cultural and contextual factors on student well-being.

**Keywords:** Health Behavior; Life Satisfaction; University Students; Cross-Cultural Comparison; Optimal Living Profile-Modified

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## INTRODUCTION

Studying abroad is a major life transition, and adapting to a new culture and academic environment can be challenging. In recent years, international student mobility has grown significantly, reflecting the globalization of higher education and the increasing demand for cross-cultural experiences. Programs such as Erasmus+ have enabled students to gain academic, professional, and personal growth in diverse cultural environments (European Commission, 2021). Such programs enhance resilience, adaptability, career opportunities, global networks, and cross-cultural competencies (Beaven & Borghetti, 2016). This allows students to experience distinct cultural, social, and educational environments, which may differ significantly from their counterparts studying in their home country. However, international students often face challenges, including cultural shock, language barriers, academic stress, financial stress, and depression, which can negatively impact their well-being and life satisfaction (Gebregergis & Csukonyi, 2025; Abdulazeez et al., 2025; Smith & Khawaja, 2011). Among international students in Hungary, Jordanian students represent a unique and growing population due to the Stipendium Hungaricum program, which offers many seats each year to Jordanians, alongside students from 94 other countries. Jordanians had the highest enrollment rate in Hungarian universities, at 6.64%, in the academic year 2023–2024. Since Jordanians come from a collectivist society, adapting to Hungary's individualistic culture may influence their health behavior and life satisfaction (Hofstede, 2023).

## LITERATURE REVIEW

### **Well-being and Life Satisfaction among University Students**

Well-being is a multifaceted concept encompassing various dimensions of an individual's life. It is described as the presence of positive emotions, life satisfaction, and the absence of negative emotions (CDC, 2022). It emphasizes a holistic approach to achieving optimal health by integrating mental, emotional, and physical health (O'Donnell, 2009; Ruggeri et al., 2020). In support of viewing the individual as a whole being, the Total Person Concept (TPC) provides a comprehensive evaluation of well-being through the assessment tool Optimal Living Profile (OLP), developed by Renger (2000) and later modified by Abu Khadra (2025) into the Optimal Living Profile-Modified (OLP-M), making it more applicable for Jordanian and Hungarian students by identifying areas of strengths and weaknesses in an individual's well-being. This tool assesses several dimensions of well-being, including intellectual, emotional, spiritual, social, and physical health, and offers a detailed evaluation of lifestyle choices and health behaviors (Renger et al., 2000; Bart et al., 2018; Abu Khadra et al., 2025). By addressing these dimensions, the OLP-M supports positive, healthy decisions, improving well-being in several aspects. Furthermore, life satisfaction is an important aspect of well-being, representing an individual's assessment of quality of life and fulfilling personal goals (Badri et al., 2022). Research indicates that university students' life satisfaction is influenced by factors such as social relationships, emotional health, and health behaviors (Mahanta & Aggarwal, 2013; Abu Khadra et al., 2025). Previous studies have shown that higher life satisfaction improves academic performance and lowers stress and anxiety (Diener et al., 2018). However, international students' life satisfaction is affected by additional challenges they encounter from cultural adjustment to academic adaptation, which impacts their ability to balance their demands in academic life (Smith & Khawaja, 2011). Moreover, findings have revealed that students with positive mindsets, healthy behaviors, and better physical health have greater life satisfaction (Mota et al., 2023; Tavakoly Sany et al., 2023). In summary, exploring health behaviors within diverse student populations enhances our understanding of their well-being and life satisfaction.

### **Health Behavior of University Students**

University students often struggle to maintain a healthy lifestyle. The transition to university life can lead to irregular sleep patterns, poor dietary habits, and reduced physical activity, negatively affecting physical health (Deliens et al., 2014; Sogari et al., 2018). Their health behaviors are influenced by academic stress, social pressure, and time constraints, resulting in unhealthy behaviors due to their demanding schedules (Heller et al., 2024; Al-Matalka et al., 2023; Palmer et al., 2024). Irregular schedules cause sleep deprivation, impacting well-being, cognitive function, and emotional regulation (Hutchesson et al., 2022). Despite the known benefits of exercise, many students still fail to meet the recommended

physical activity levels, leading to sedentary lifestyles (Heller et al., 2024). Additionally, dietary intake changes during university life, where students prefer fast food and sugary beverages over fruits and vegetables, leading to a greater risk of weight gain and obesity (Takruri et al., 2024; Hutchesson et al., 2022). Furthermore, international students' health behaviors are influenced by additional challenges, such as adapting to new diets, limited access to familiar meals, and homesickness (Citak Tunc et al., 2021; LaMontagne et al., 2023; Russell et al., 2023; Kristiana et al., 2022). Other risky behaviors, such as smoking, alcohol consumption, and drug use, are common among university students and are usually triggered by social norms and stress (Hutchesson et al., 2022). However, studying abroad can offer opportunities to enhance some health behaviors. For example, Hungary offers better infrastructure for sports and outdoor activities than Jordan does, which may increase physical activity. This is particularly relevant since traditional norms in Jordan might restrict such activities (Takruri et al., 2024). Conversely, international students must adjust to the host country's dietary patterns, which might lead to weight gain or malnutrition along with increased stress levels. Moreover, local students remain more culturally adjusted to their environment and have easier access to familiar food (Takruri et al., 2024; Kristiana et al., 2022). Thus far, university and international students have undergone many ups and downs regarding their lifestyles, highlighting that promoting healthy behaviors can be challenging and significant in improving well-being. While previous studies focused on international students' challenges, few studies have explored the cross-cultural influence of health behaviors on life satisfaction. The use of the OLP-M in this study allows holistic evaluation and assessment of health behaviors, life satisfaction, and well-being.

## Objectives

This research aims to explore the well-being challenges Jordanian students encounter as international students in Hungary (JH) compared with Hungarian students (H) and Jordanian students in Jordan (JJ). This study aims to deepen our understanding of the cultural and contextual factors influencing students' well-being by examining how health behaviors, well-being, and life satisfaction differ across groups. At the University of Pécs, one of the largest institutions in Hungary, Jordanian students represent 4.14% (207 students) of its international student population (*TKA., Statisztikák, Tempus Közalapítvány, 2023*). This growing number of Jordanian students studying in Hungary has raised questions about the factors influencing their well-being and overall academic success, which may provide valuable information about international students compared with local students. Additionally, the findings aim to notify educational institutions with recommendations to enhance students' well-being while studying locally and abroad. It aims to address the following research questions (RQs):

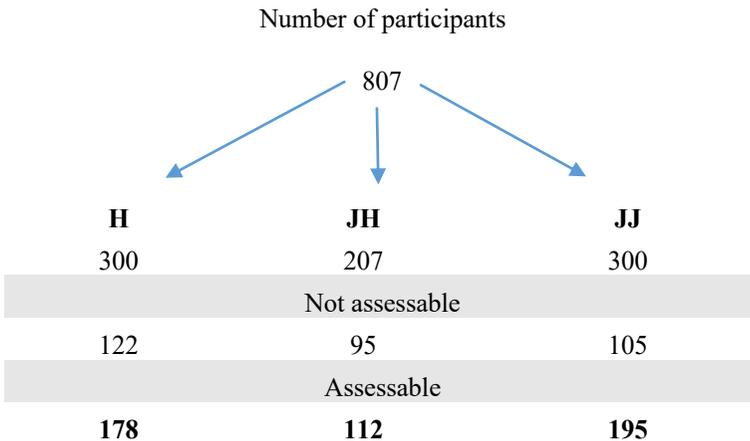
- RQ<sup>1</sup>: Are there differences in life satisfaction between the samples?
- RQ<sup>2</sup>: Are there differences in the OLP-M dimensions between the samples?
- RQ<sup>3</sup>: Are there differences in health behavior between the samples?

- RQ<sup>4</sup>: What is the relationship between health behavior, OLP-M, and life satisfaction?

## METHOD

### Participant and Ethical Considerations

In this cross-sectional study, data were collected via an online questionnaire via Google Forms conducted at the University of Pécs in Hungary for H and JH and at the Applied Science Private University for JJ. Formal consent was obtained from all participants, and participation was anonymous and voluntary. Ethical approval was granted from both universities, the University of Pécs Regional Research Ethics Committee, and the Institutional Review Board approved the proposal in June 2022 (Nr. 9263 – PTE 2022). The data were collected over 8 months, from September 2022 to April 2023. The Applied Science Private University Institutional Review Board approved the proposal in June 2024 (AMS-24-5). Data collection lasted 5 months, from September to December 2024. The questionnaire was sent to all 207 JH students and to a random sample of 300 H and 300 JJ students through emails and social media platforms. The inclusion criteria were students enrolled in faculties of allied health sciences, sciences, and medicine, aged 18-35 years, and currently studying at both universities. Figure 1 shows the sampling process. We performed a sample size estimation via G\*Power software (Faul et al., 2009). The calculation was based on a 5% significance level, a statistical power of 0.8, and a medium effect size (0.15).



**Figure 1: Sampling Process and Sample Size**

The sample size proved to be sufficient for the methods to be applied. A total of 485 students completed the questionnaire with at least 90% of the questions answered within each dimension; of these, H completed it in Hungarian; considering that they study in the Hungarian language, with a response rate of

59.3%, JH completed it in English; considering that they require an English proficiency test at the University of Pécs, with a response rate of 54.1%, JJ completed it in English; considering that they study in English, with a response rate of 65.0%. In JH, the average age is  $25.8 \pm 4.6$ ; in H, the average age is  $23.7 \pm 2.8$ ; and in JJ, it is  $22.5 \pm 3.4$ . The gender distributions were 58.0% men in JH and 57.9% men in H, whereas JJ had a significantly greater proportion of women (65.1%).

## Instruments and Methods

**Demographics.** Demographic characteristics, including age, sex, and employment status, were obtained.

**OLP-M.** The OLP-M assessment tool evaluates well-being in five dimensions: intellectual, spiritual, social, emotional, and physical health. These dimensions are divided into sixteen factors: *Personal growth, Creativity, Interest in social and natural science discoveries, Basic purpose in life, Pursue a fulfilling life, Depression, Optimism, Well-being, Getting along with others, People react to person answering, Person interaction with social environment, Physical activity, Nutrition, Sleep quality, Life satisfaction, and Happiness* (Abu Khadra et al., 2025). The participants were asked to rate most of the items on a 5-point Likert scale with two different formats depending on the item phrasing. One format ranged from *almost never* to *frequently*, and the other format ranged from *strongly agree* to *strongly disagree*.

**Health Behavior.** The health behavior variable was extracted from the physical health dimension of the OLP-M. The following factors were used to examine health behavior: physical activity (e.g., Do you participate in aerobic exercise or a sport such as jogging, running, tennis, swimming, etc.), smoking (e.g., I use tobacco products), alcohol consumption (e.g., I use alcohol and/or drugs as a way of handling stressful situations), nutrition (e.g., I have breakfast every morning), sleep quality (e.g., I sleep more than six hours each night), oral hygiene (e.g., I floss my teeth daily), and preventive behaviors (e.g., wearing a helmet when cycling). An exploratory factor analysis was conducted on the items, revealing two dimensions: Active-Health Behavior “*Active-HB*” and Passive-Health Behavior “*Passive-HB*”. The factor values estimated via the regression method were transformed to a 1–5 point scale. Higher values indicate healthier behavior.

**Life Satisfaction.** Life satisfaction was measured with the following question: “I am satisfied with my personal life” on a 5-point Likert scale (very frequently = 5, often = 4, occasionally = 3, rarely = 2, almost never = 1).

## Data Analysis

The analyses were conducted via SPSS version 29.0 and JASP version 0.18.3, with two-sided p values considered significant at  $p < 0.05$  (SPSS 29.0, 2009; JASP Team 0.19, 2024). We checked the normality of the variables via the Kolmogorov–Smirnov test. Given that the assumption of normality was

statistically met (with the distribution being approximately normal), we applied robust parametric tests to explore the relationships between the variables. The Pearson correlation coefficient test was used to assess the relationships between the OLP-M dimensions and life satisfaction and between the OLP-M dimensions and health behavior (RQ<sup>1</sup>, RQ<sup>2</sup>). To explore differences in life satisfaction between groups, we conducted an analysis of variance (ANOVA). We used the Scheffé post hoc test (RQ<sup>3</sup>) to identify which group differences were significant. Furthermore, we applied exploratory factor analysis (extraction method: principal component analysis, using eigenvalues greater than 1; rotation method: varimax with Kaiser normalization) to develop the health behavior variable and its underlying factors, considering that the correlation between the items was sufficiently strong. Before conducting the factor analysis, we checked whether Kaiser–Meyer–Olkin (KMO) > 0.6 and whether Bartlett’s test was significant. Additionally, we analyzed the effects via multivariate methods, such as linear regression analysis and path modeling (RQ<sup>4</sup>).

## **RESULTS**

### **Life Satisfaction**

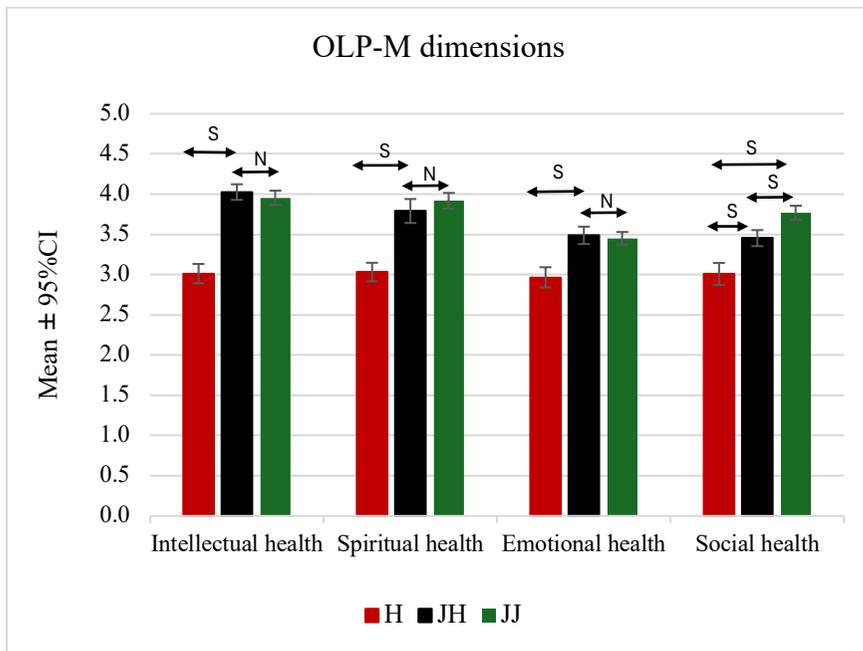
The means of life satisfaction in the groups were as follows: H: 3.0 (95% CI: 2.9-2.2), JH: 3.7 (95% CI: 3.5-3.9), JJ: 4.1 (95% CI: 4.0-4.2). Considering that the distribution of this variable can be regarded as quasi-normal, we applied ANOVA to compare satisfaction across the groups and used the Scheffé post hoc test for pairwise comparisons. The means of all three groups were significantly different ( $p < 0.050$ ).

### **OLP-M**

We applied the Scheffé test to compare the OLP-M dimensions among the three groups (Figure 2). The results revealed that H rated their well-being significantly lower in all four dimensions. The only difference among Jordanian students was observed in the social health dimension, depending on whether they studied in Hungary or Jordan. Those studying in their home country reported significantly better social health than those studying abroad. The significance level was less than 0.001 in all cases.

### **Health Behavior**

In Table 1, the confidence intervals for the responses of health behavior factors are slightly wider than those for the OLP-M dimensions, indicating greater variance within the groups. According to Scheffés’ test, the three groups did not differ significantly in terms of alcohol consumption or preventive behavior. However, for the other factors, H has the lowest score compared with both JH and JJ, except for oral hygiene and non-smoking, as smoking is prevalent in JJ.



**Figure 2: Mean Values of the OLP-M Dimensions (S:  $p < 0.001$ , N:  $p \geq 0.050$ , insignificant)**

**The Relationship between Health Behavior, OLP-M, and Life Satisfaction**

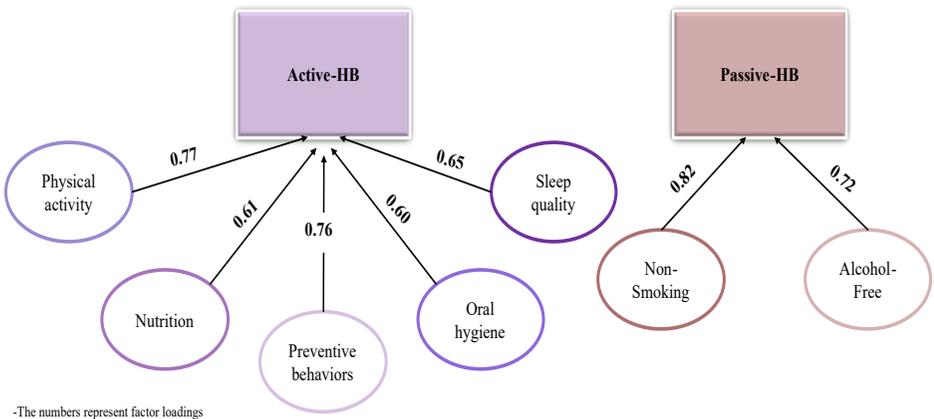
Initially, the findings revealed that when the three groups ( $n=485$ ) were combined, there was a highly significant correlation between the OLP-M and life satisfaction ( $r = 0.67$ ,  $p < 0.001$ ). Additionally, a significant correlation was observed between the total health behavior score and the OLP-M ( $r = 0.30$ ,  $p < 0.001$ ). To explore the relationships among health behavior, the OLP-M, and life satisfaction, it was necessary to create an indicator that globally characterized the health behavior of each student group.

**Factor Analysis of Health Behavior**

We examined whether the responses to the health behavior items correlated with each other. The results revealed that the KMO value ( $KMO = 0.69$ ) and Bartlett’s test ( $p < 0.001$ ) were significant. Given that the correlation between the factors was sufficiently strong, factor analysis was applied. In Figure 3, the exploratory factor analysis defines the dimensions of the health behavior variable, resulting in Active-HB with high factor loadings, including factors related to healthy behaviors, and Passive-HB with high factor loadings of factors related to avoiding harmful behaviors.

**Table 1: Mean Values of Health Behavior Factors**

Health Behavior Factors	Sample	Mean	95% CI Mean		Significance level		
			Upper	Lower	H-JH	H-JJ	JH-JJ
Physical activity	H	2.6	2.7	2.4	<0.001	<0.001	0.394
	JH	3.3	3.4	3.2			
	JJ	3.4	3.5	3.3			
Non-smoking	H	4.1	4.4	3.9	<0.001	<0.001	0.376
	JH	3.0	3.3	2.7			
	JJ	2.7	3.0	2.5			
Alcohol-free	H	2.8	3.0	2.6	0.569	0.998	0.595
	JH	3.0	3.2	2.8			
	JJ	2.8	3.0	2.7			
Nutrition	H	2.4	2.6	2.3	<0.001	<0.001	<0.001
	JH	2.8	2.9	2.6			
	JJ	3.6	3.8	3.5			
Preventive behaviors	H	3.4	3.7	3.2	0.351	0.690	0.772
	JH	3.7	3.8	3.5			
	JJ	3.5	3.7	3.4			
Oral hygiene	H	4.0	4.2	3.8	<0.001	0.201	<0.001
	JH	3.2	3.5	2.9			
	JJ	3.8	3.9	3.6			
Sleep quality	H	2.9	3.1	2.8	<0.001	<0.001	0.031
	JH	3.4	3.6	3.2			
	JJ	3.7	3.9	3.6			



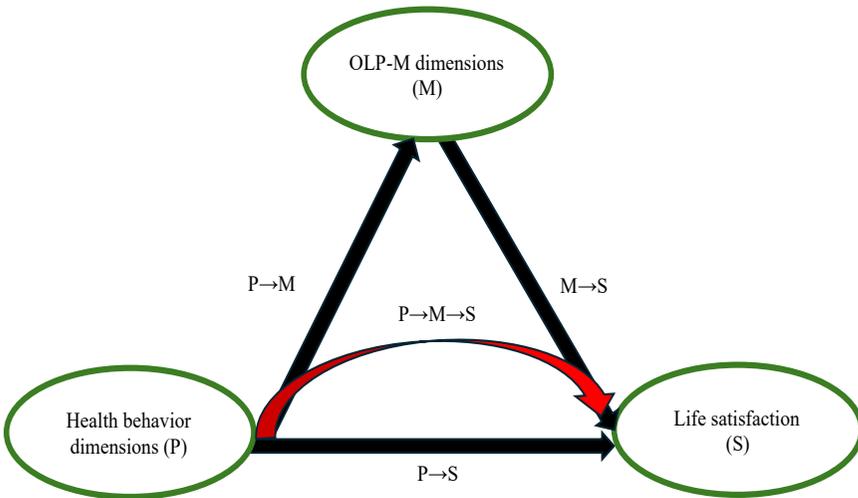
**Figure 3: Factor Analysis of Health Behavior**

Moreover, we examined the relationships between the OLP-M dimensions and health behavior dimensions (Table 2). A positive significant correlation is shown between the Active-HB and all the OLP-M dimensions, whereas the Passive-HB shows a positive significant correlation with emotional health and a negative significant correlation with spiritual health.

**Table 2: Health Behavior and the OLP-M Relationship**

		Intellectual health	Spiritual health	Emotional health	Social health
Active-HB	Correlation	0.46	0.37	0.42	0.52
	Sign. (2-tailed)	<0.001	<0.001	<0.001	<0.001
Passive-HB	Correlation	0.01	-0.11	0.13	0.08
	Sign. (2-tailed)	0.911	0.014	0.006	0.101
df		467	467	467	467

Control variable: sample



**Figure 4: Path Model**

Additionally, we examined the correlations between health behavior dimensions, OLP-M dimensions, and life satisfaction. Life satisfaction was positively correlated with all the following OLP-M dimensions: intellectual health ( $r = 0.51$ ), spiritual health ( $r = 0.28$ ), emotional health ( $r = 0.68$ ), social health ( $r = 0.64$ ), and Active-HB ( $r = 0.44$ ), all of which were statistically significant ( $p < 0.001$ ). However, there was no significant correlation with Passive-HB ( $r = 0.03$ ,

p = 0.497). We also analyzed the following path models, comparing the data in Table 2 and the outcomes of the correlations. This finding illustrates that health behavior dimensions (P) directly influence OLP-M dimensions (M) and life satisfaction (S), with M mediating the relationship between P and S.

Furthermore, Table 3 shows the direct, indirect, and total impacts of health behavior on life satisfaction, with Active-HB having a significant effect on both the OLP-M dimensions and life satisfaction, whereas Passive-HB has a weaker influence.

**Table 3: Impact (β) of Health Behavior Dimensions on Life Satisfaction (path analysis)**

Model	Predictor variable (P)	Mediator variable (M)	Path coefficient between P and M	Path coefficient between P and S	Impact of P on S through the mediation of M	Total impact of P on S
Model1	Active-HB	Intellectual health	0.46**	0.30**	0.17**	0.47**
	Passive-HB		0.04	0.06	0.02	0.08*
Model2	Active-HB	Spiritual health	0.38**	0.42**	0.06	0.47**
	Passive-HB		-0.08	0.09	-0.01	0.08*
Model3	Active-HB	Emotional health	0.43**	0.23**	0.24**	0.47**
	Passive-HB		0.16**	-0.01	0.09**	0.08*
Model4	Active-HB	Social health	0.56**	0.16**	0.31**	0.47**
	Passive-HB		0.13**	0.01	0.07	0.08*

\* p < 0.050, \*\*p<0.001

### **Health Behavior Predictors of Life Satisfaction**

We examined the extent to which individual behavioral factors contribute to life satisfaction. To analyze this, we applied a multiple linear regression model to determine the relative weight of each factor in explaining life satisfaction. In the multiple linear regression, life satisfaction was the dependent variable, and health behavior factors were the independent variables. Age and sex were included as control variables; they were not significant in any sample and were thus excluded

from further models. Table 4 presents the standardized regression coefficients and adjusted coefficients of determination for the significant predictor variables.

**Table 4: Standardized regression coefficients and adjusted R<sup>2</sup> values for significant predictors**

Group	Significant predictors	$\beta$ Coefficient	95% Confidence interval for $\beta$	P value	Adjusted R <sup>2</sup>	Model significance ANOVA
H	Physical activity	0.39	0.27-0.51	p < 0.001	0.40	p < 0.001
	Sleep quality	0.32	0.21-0.43	p < 0.001		
JH	Physical activity	0.33	0.21-0.45	p < 0.001	0.11	p < 0.001
JJ	Preventive behaviors	0.23	0.12-0.34	p < 0.001	0.12	p < 0.001
	Sleep quality	0.17	0.10-0.24	p < 0.001		

## DISCUSSION

This study explored the well-being and life satisfaction of university students in Hungary and Jordan by analyzing health behaviors and cultural influences. The results revealed significant correlations between the OLP-M dimensions and life satisfaction, as well as between health behaviors and well-being. Jordanian students, both in Jordan and abroad, reported higher life satisfaction than Hungarian students did, suggesting that cultural background plays a significant role in determining well-being.

Our findings revealed a significant correlation between the OLP-M and life satisfaction and between health behavior and the OLP-M. Furthermore, path model analysis demonstrated that both health behavior dimensions impact life satisfaction. However, the effect of Passive-HB was observed through the mediation of the emotional health dimension. The results suggest that cultural background plays a stronger role than does the immediate environment in shaping life satisfaction, although environmental factors may still contribute to individual experiences. According to ANOVA, life satisfaction differed significantly between groups, with JJ having the highest scores, followed by JH and H. Unlike previous research suggesting that international students experience lower life satisfaction due to adaptation challenges (Smith & Khawaja, 2011), our findings indicate that JH maintains greater well-being, possibly due to strong cultural resilience and support systems where family and friendships are most valued (Hofstede, 2023; Hofstede, 2011). This suggests that cultural background significantly affects students' well-being and life satisfaction, regardless of location. Similarly, both Jordanian students exhibited more positive health

behaviors than Hungarians did, which also supports the argument that it is not merely the environment or university setting that influences health behaviors but also their cultural backgrounds. JJ students performed worse than Hungarians did only in terms of avoiding harmful behaviors (Table 1). However, the significance of this difference was much lower than that of health-promoting behaviors. Finally, to explain the differences in life satisfaction, regression analysis revealed that physical activity and sleep quality were the main strong predictors of life satisfaction. This aligns with previous research showing that physical activity and adequate sleep contribute to mental well-being by reducing stress, improving cognitive function, and promoting emotional stability (G.-Y. Zhou et al., 2023; Ergüven et al., 2022).

### **Cultural Differences and Their Influence on Health Behaviors and Life Satisfaction**

Initially, the cultural context in which the three groups live and study significantly influenced their life satisfaction, health behaviors, and OLP-M. We compared Jordan, a collectivist society (Hofstede, 2023), and Hungary, an individualistic society (Hofstede, 2023). The ANOVA results revealed differences between JJ, H, and JH ( $RQ^1$ ,  $RQ^2$ ,  $RQ^3$ ).

#### ***Jordanians in Jordan***

JJ exhibited the highest life satisfaction of all groups and the highest scores in the OLP-M dimensions, likely due to the strong social support and family-oriented values common in collectivist societies (Hofstede, 2023; Hofstede, 2011). Research has shown that a sense of community and social support in collectivist societies act as buffers against stressors, which enhance life satisfaction and significantly predict well-being (Mahanta & Aggarwal, 2013). Additionally, JJ scored highest in physical activity, nutrition, and sleep quality from Active-HB, reflecting the emphasis on communal health responsibility in collectivist societies, which promotes healthier behaviors (Hofstede, 2011). Individualistic societies encourage healthy behaviors through self-care and autonomy, even though they may face greater stress from competition and independence (Schwartz et al., 2011). Social norms and peer expectations further influence students to choose healthy behaviors if they are seen as group standards (J. Liu et al., 2017). Similarly, close family ties create supportive environments that encourage good habits and emotional support (Yandutkina et al., 2024). This results in engaging in preventive behaviors if assigned by community norms. Despite collectivist values, JJ still reported the lowest rates of avoiding smoking, likely due to higher smoking rates in Jordan than in Hungary, which explains why smoking is more prevalent among JJ and JH than H (WHO, 2021). However, such behaviors vary depending on context and educational environment, highlighting that cultural influence, health education, and infrastructure are connected (Lesińska-Sawicka et al., 2021). Thus, JJ's high life satisfaction and health

behaviors reflect collectivist values of social support, familial bonds, and cultural norms, promoting well-being.

### ***Hungarians***

In contrast, H had the lowest life satisfaction among the three groups. This can be explained by common stressors in individualistic societies, prioritizing personal autonomy and individual success, weakening social relationships, and negatively impacting life satisfaction (Ogihara & Uchida, 2014). Previous research has shown that Jordanian students in Hungary reported higher levels in all OLP-M dimensions than Hungarian students did, indicating that their well-being was influenced by their cultural background (Abu Khadra et al., 2025). Moreover, individualistic societies promote competition and the constant pursuit of achievement between individuals, creating social anxiety and pressure to succeed, leading to poor health behaviors (Ogihara & Uchida, 2014). However, research has shown that since individualistic societies emphasize personal responsibility and freedom, this leads to increased engagement in healthy behaviors (Zambrano Bermeo et al., 2023), explaining how H scores the highest in oral hygiene. Additionally, H scores the highest in non-smoking, where individualistic values motivate individuals to avoid harmful behaviors (Hou et al., 2024). Despite this, the transition to university life in individualistic societies can lead to poor dietary habits and a lack of physical activity (Çol et al., 2024), elaborating on H's lower Active-HB scores. Overall, the low life satisfaction of H may be attributed to the stressors and social pressures of an individualistic society, although their higher non-smoking scores suggest positive engagement in avoiding harmful behaviors despite the challenges of university life.

### ***Jordanians in Hungary***

JH, who came from a collectivist society and lived in an individualistic society, showed a blend of behaviors. The results revealed no significant differences between JH and JJ in the OLP-M dimensions, except for social health, where JJ scored higher, suggesting that JH maintained most of their well-being abroad. JH reported greater life satisfaction and healthier behaviors in terms of physical activity, nutrition, and sleep quality than H did. This can be attributed to the cultural values, strong social support, and emotional resilience associated with their collectivist background (Hofstede, 2023; Hofstede, 2011). While exposure to a new culture can lead to changes in behavior as students adapt to new social norms, cultural background still significantly influences life satisfaction. Studies have shown that international students overcome challenges through social inclusion, institutional support, and targeted interventions that enhance their well-being (Gebregergis & Csukonyi, 2025; Abdulazeez et al., 2025). In summary, JH maintained greater life satisfaction and healthier behaviors, highlighting the influence of cultural values on well-being.

### **Relationship between Health Behavior, OLP-M, and Life Satisfaction (RQ<sup>4</sup>)**

A positive relationship was found between OLP-M and life satisfaction, aligning with the TPC, which explains why individuals with better well-being across social, emotional, spiritual, physical, and intellectual health have greater life satisfaction (Renger et al., 2000). Several studies indicate that strong social support from family, friends, and peers among university students is correlated with higher life satisfaction levels (Thomas et al., 2023; Ma et al., 2024). Similarly, positive emotional health states, such as optimism and happiness, indicate greater life satisfaction, helping students better adapt academically and maintain their well-being (Liu & Wang, 2024). However, academic pressure and negative emotions such as anxiety and depression reduce life satisfaction (Ma et al., 2024; Liu & Wang, 2024). Moreover, students who participate in religious or spiritual activities often experience a sense of purpose and belonging, which reduces stress and improves well-being (Saintila et al., 2024; Anand, 2024). Additionally, regular physical activities have been proven to improve mood, self-control, and social relationships among university students through leisure and sports activities with peers, which can be a way to manage stress and socialize (G.-Y. Zhou et al., 2023; Zhang et al., 2022). Our research confirmed that multiple OLP-M dimensions positively impact life satisfaction, supporting a holistic view of well-being.

Furthermore, we found a significant correlation between the OLP-M dimensions and health behaviors, highlighting the importance of well-being dimensions for health behaviors. Research has shown that social health influences health behaviors in various ways, indicating that social interactions and peer pressure can determine eating behaviors, substance use, or physical activity (Hernández-González et al., 2018; Yandutkina et al., 2024). In addition, emotional health can promote healthy behaviors or harmful behaviors as a coping mechanism (Tao et al., 2024; Hutchesson et al., 2022). Additionally, spirituality enhances students' emotional resilience, indirectly supporting healthier lifestyle choices (Božek et al., 2020; Miles & Naumann, 2024). Finally, students with greater intellectual engagement are more aware of the benefits of healthy behaviors (Yandutkina et al., 2024). To summarize, the OLP-M dimensions help shape the health behavior of university students either positively or negatively, which led us to identify two distinct dimensions of health behaviors, Active-HB and Passive-HB.

### **Active-HB and Passive-HB Influence on Life Satisfaction (RQ<sup>4</sup>)**

Active-HB represents healthy behaviors, whereas Passive-HB represents the avoidance of harmful behaviors. The factor analysis and path model further explain the correlations among life satisfaction, the OLP-M, and health behavior. The results revealed that Active-HB is positively correlated with all the OLP-M dimensions, suggesting that healthy behaviors broadly impact well-being. Additionally, Active-HB's total effect on life satisfaction was significantly positive with the mediation of the OLP-M dimensions, revealing that improving

these dimensions enhances life satisfaction. Furthermore, the direct effect of Active-HB on life satisfaction was also significant, indicating that students who engage in healthier behaviors report higher life satisfaction. Earlier studies have shown that physically active students report greater life satisfaction than their inactive peers do (Ergüven et al., 2022). Since the physical activity performance of students can be influenced by their eating habits, factors such as access to nutritious food on campus, familial eating habits, and food satisfaction can impact the life satisfaction of students (Almoraie et al., 2024; Ergüven et al., 2022). Similarly, sleep quality is a critical determinant of life satisfaction, with poor sleep quality and irregular sleep routines associated with lower life satisfaction (Ness & Saksvik-Lehouillier, 2018; Prokeš, 2023). Additionally, oral hygiene contributes to healthier lifestyles and sociability, which enhances life satisfaction (Vaičiūnas et al., 2024). Additionally, preventive behaviors to avoid illness and reduce the need for medical interventions increase life satisfaction (L. Zhang et al., 2023). Thus, the "healthier" the students' behavior is, the more positively they perceive their life satisfaction. Passive-HB was significantly positively correlated with social and emotional health; however, it did not have a significant effect on the other OLP dimensions because of its relatively weak impact. Research has revealed that students tend to have lower anxiety, depression, and a stable mood than their peers who are associated with nicotine use and drinking (Jensen et al., 2021). Avoiding such behaviors can increase self-discipline and resilience, which strengthens well-being and enhances the college experience (Huang et al., 2009). Academically, abstaining students show stronger performance, higher class attendance, and better memory (Alqahtani et al., 2023). Despite social health challenges, students can still find fulfilling relationships through alternative social activities that accompany their lifestyle choices (Balestrieri et al., 2018). Therefore, while avoiding harmful behaviors may not impact all the OLP-M dimensions, highlighting the mediation and positive influence of emotional health on life satisfaction is important.

### **Life Satisfaction Predictors**

Finally, several health behavior factors explained the differences in life satisfaction among the groups. Physical activity and sleep quality were the common significant predictors among all three groups. These findings suggest that physical activity and sleep quality are essential for improving life satisfaction. Previous studies highlighted the importance of sleep in maintaining physical and psychological well-being (Ness & Saksvik-Lehouillier, 2018; Prokeš, 2023). Over the years, many studies have proven the multiple benefits of physical activity participation and its effects on life satisfaction and well-being (G.-Y. Zhou et al., 2023; Ergüven et al., 2022). In summary, physical activity and sleep quality significantly increased life satisfaction across all groups.

## **Implications**

This study highlights the significant role of cultural context in shaping university students' well-being and health behaviors, suggesting that cultural values may buffer against the stressors of studying abroad. Universities should consider cultural differences when developing support systems for local and international students and fostering environments that increase life satisfaction. Furthermore, promoting healthy behaviors, particularly physical activity and sleep quality, can improve life satisfaction.

## **Strengths and Limitations**

This study's cross-cultural design provides valuable insights into the well-being and health behaviors of Hungarian and Jordanian university students. The large, diverse sample enhances the generalizability of findings and robust statistical methods. However, reliance on self-report measures may introduce bias, and low response rates may distort the results. Future studies should incorporate objective health measures or qualitative interviews to validate self-reported data. The study's focus on two specific cultural groups limits its generalizability to other international student populations. Future studies should examine similar populations in different regions to determine whether these patterns hold across various cultural contexts. Finally, contextual factors, such as socio-economic status or personality traits, were not explored, which could influence the results.

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- None*
- Some sections, with minimal or no editing*
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