

Comparison of Biological Habits and Leisure Time Activities Among Native and Non-Native Students in Universities of Kerman Province

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Article type:
Original Research

Article history:
Received 11 July 2025
Revised 17 July 2025
Accepted 18 October 2025
Published online 01 January 2026

ABSTRACT

The present study was conducted with the aim of comparing the level of biological habits and the ways of spending leisure time among native and non-native students in universities of Kerman Province. The study was applied in purpose and descriptive-comparative (ex post facto) and cross-sectional in method. The statistical population included all associate to doctoral students of universities in Kerman Province during the 2024–2025 academic year. From this population, 360 participants (180 native and 180 non-native students) were selected through convenience sampling. The data collection instrument was the Lifestyle Questionnaire, whose overall reliability was obtained at 0.87 using Cronbach's alpha. The results showed that there was a significant difference between local and non-local students in all subscales of biological habits and leisure activities ($p < 0.001$). The findings suggest that differences in living conditions and access to supportive resources can influence students' biological patterns and leisure time behaviors. University-level planning to promote a healthy lifestyle—particularly among non-native students—can play a crucial role in preventing individual and social harm and in improving students' mental health.

Keywords: Biological habits, leisure time, native students, non-native students, lifestyle, Kerman Province

How to cite this article:

Naseri, S., Afrooz, Gh., Ghanbarihasemabady, B., & Sajjadi Anari, S. (2026). Comparison of Biological Habits and Leisure Time Activities Among Native and Non-Native Students in Universities of Kerman Province. *Mental Health and Lifestyle Journal*, 4(1), 1-14. <https://doi.org/10.61838/mhlj.4.1.6>

Introduction

University life represents a crucial developmental stage that involves social adaptation, psychological adjustment, and behavioral regulation. For many students, especially those transitioning from adolescence to early adulthood, entering higher education entails encountering new living conditions, academic challenges, and social expectations that shape their lifestyle patterns, psychological well-being, and overall

health (1). In this context, *lifestyle* encompasses not only biological and health-related habits such as sleep, nutrition, exercise, and disease prevention but also social, psychological, and spiritual dimensions that influence students' well-being and academic success (2). In Iran, as in many other countries, a significant number of university students live away from their families—either in dormitories or rented accommodations—leading to differences in lifestyle and leisure behaviors between native (local) and non-native (non-local) students (3). Understanding these differences is essential for designing health-promoting educational and social interventions aimed at improving students' academic and psychological outcomes.

Lifestyle is an integrative construct that reflects an individual's physical, mental, social, and spiritual behaviors in everyday life (4). In the academic setting, this construct becomes particularly relevant as students' habits—such as dietary regulation, sleep hygiene, exercise routines, and stress management—directly affect their physical and psychological health (5). University dormitories, where many non-native students reside, create distinctive social environments that influence these habits. Studies have shown that communal living, limited privacy, and reduced parental supervision often lead to irregular sleeping and eating patterns, lower physical activity, and heightened psychological stress (6, 7). These conditions may also alter the quality of interpersonal relationships, time management skills, and coping strategies, potentially resulting in health-related disparities between native and non-native students.

The concept of *biological habits*—encompassing diet, sleep, hygiene, and physical exercise—plays a fundamental role in determining students' physiological and mental balance (8). Disruptions in these routines can impair concentration, learning efficiency, and emotional regulation. Research by (5) found a significant association between poor sleep quality and higher levels of mental distress among dormitory students in Iranian universities. Similarly, (7) demonstrated that international students in Malaysia experience a higher prevalence of sleep disorders, largely due to environmental changes and academic pressures. These findings underscore that lifestyle imbalance, especially among non-native or displaced students, is a growing concern in higher education institutions worldwide.

Leisure management is another critical dimension of student life, closely linked with emotional resilience, social adaptation, and well-being (9). Proper management of leisure time enables individuals to recover from stress, enhance social connections, and pursue personal growth. Conversely, boredom and mismanagement of free time can lead to maladaptive behaviors such as internet addiction or social withdrawal (9). (4) conceptualized leisure as “the most valuable moment of human life,” emphasizing its role in cultivating creativity, self-awareness, and social responsibility. Despite its importance, leisure is often overlooked in the design of student welfare programs, particularly for those living in dormitories or away from familial networks.

The role of the family and social support systems in shaping healthy lifestyles and psychological well-being has been widely recognized (10, 11). Supportive relationships—whether from family, peers, or educational institutions—act as protective buffers against stress, anxiety, and depression among university students (10). (11) found that strong family bonds significantly predict better psychological health and adaptability among youth. However, when students relocate for academic purposes, their access to such supportive networks becomes limited. Non-native students, therefore, face greater vulnerability to emotional and behavioral difficulties due to separation from familial support systems (12).

Cultural and contextual factors also influence students' adjustment processes. (13) reported that Indigenous post-secondary students in Canada experience high levels of distress and substance use, reflecting the role of sociocultural dislocation in mental health. Similarly, (14) identified that immigrant students in the United States face elevated levels of school anxiety and depression, particularly when language barriers and cultural differences are present. These studies illustrate that non-native or immigrant students across diverse societies encounter unique psychosocial stressors that shape their lifestyles and coping mechanisms. In Iran, (15) demonstrated that non-native engineering students reported lower levels of spiritual vitality and general health compared to their native counterparts, indicating that relocation and dormitory living may negatively affect both mental and spiritual domains of well-being.

Spiritual health, as a dimension of holistic wellness, has received increasing scholarly attention in recent years (1). It represents an individual's sense of meaning, connection, and inner peace, which can buffer the effects of stress and promote life satisfaction. In academic contexts, students with higher spiritual health demonstrate better emotional stability, academic motivation, and resilience to environmental challenges. However, distance from home and community-based spiritual practices may reduce the strength of this protective factor among non-native students (15). Thus, integrating spiritual development into student health programs can be a strategic approach to promoting overall well-being and academic achievement.

Academic success is often intertwined with lifestyle quality and psychological adjustment. Systematic reviews have highlighted that academic performance is influenced not only by cognitive and motivational factors but also by sleep, nutrition, exercise, and social support (16). (17) found significant cross-national disparities in academic achievement between native and non-native students, suggesting that environmental and social conditions profoundly affect learning outcomes. In the Iranian context, (2) identified that dormitory students often face challenges such as inadequate nutrition, irregular routines, and limited leisure resources, which collectively contribute to lower academic efficiency. Therefore, understanding how lifestyle and leisure management differ between native and non-native students can help policymakers design targeted interventions to enhance educational performance and health equity.

From a psychological perspective, perfectionism, anxiety, and stress are also connected to unhealthy lifestyles. (8) showed that controlling parenting styles and perfectionistic tendencies increase error-related negativity (ERN) in young adults, reflecting heightened self-criticism and stress reactivity. Non-native students, who frequently strive to meet familial or societal expectations despite being distant from their traditional support systems, may exhibit similar cognitive-emotional patterns. Furthermore, (18) emphasized that international students represent a high-risk group for suicide and self-harm due to academic stress, social isolation, and acculturative challenges. This finding reinforces the necessity of mental health support programs tailored to the specific needs of displaced or dormitory students.

The environmental conditions of dormitory life also play a crucial role in shaping health behaviors. (6) demonstrated that overcrowded dormitories, insufficient recreational facilities, and inconsistent nutrition contribute to decreased academic progress and satisfaction. In contrast, students living at home benefit from family monitoring, balanced nutrition, and emotional stability (3). (19) observed similar patterns among international students in Hungary, where those living independently reported poorer sleep quality and subjective health compared to native peers. Collectively, these studies confirm that living arrangements and environmental factors exert significant influence over both lifestyle and psychological outcomes.

Moreover, stress and sleep quality are interrelated determinants of student performance. (20) found that poor sleep and high stress significantly predict lower academic outcomes among both domestic and international students. Irregular sleeping patterns, which are more common among dormitory residents, exacerbate fatigue and cognitive inefficiency, thus undermining learning. Similarly, (1) noted that higher spiritual well-being correlates with better academic performance, suggesting that psychological and spiritual resources can mitigate the negative effects of stress on educational functioning.

At a broader level, university culture and institutional policies shape students' ability to maintain balanced lifestyles. (21) emphasized that family support, school satisfaction, and the learning environment are vital predictors of academic achievement among both native and immigrant students. Therefore, universities must not only provide academic resources but also cultivate environments that foster psychological safety, inclusivity, and holistic well-being. Programs promoting health literacy, time management, and leisure engagement are instrumental in improving students' adaptation and performance (19).

Despite extensive research on student health and well-being, comparative studies between native and non-native students remain limited in Iran. Previous studies have mostly focused on isolated aspects such as sleep, nutrition, or psychological distress (2, 12). Few have simultaneously examined the interaction between biological habits and leisure management, despite the fact that both are integral to students' lifestyle and academic functioning. This gap underscores the need for comprehensive investigations into how relocation, dormitory life, and social context collectively influence student well-being.

In light of the reviewed literature, it becomes evident that understanding the lifestyle and leisure behavior of students is not merely a sociological or health-related inquiry—it is a multidimensional issue that intersects with education, psychology, and social policy. Differences between native and non-native students in lifestyle habits and leisure management can illuminate underlying inequities in access to resources, emotional support, and health-promoting conditions. Therefore, the present study aims to compare biological habits and leisure time management between native and non-native university students in Kerman Province, Iran.

Methods and Materials

Study Design and Participants

The present study was applied in purpose and descriptive–comparative with an ex post facto and cross-sectional design. The objective of this section was to examine and compare the differences between native and non-native students of universities in Kerman Province regarding the two main variables of the study, namely biological habits and the manner of spending leisure time. Data were collected by administering standardized questionnaires to a sample of students and were then analyzed using descriptive and inferential statistical methods (including the independent *t*-test) to determine whether there were significant differences between the two groups of students in lifestyle components and leisure time activities.

The statistical population consisted of all students at associate, bachelor's, master's, and doctoral levels in universities of Kerman Province during the 2024–2025 academic year. A *native student* was defined as an individual who, during their studies, lived in the same city or region as their permanent residence and typically resided with their family. A *non-native student* referred to an individual who had to leave their

permanent place of residence to pursue their studies and lived in dormitories or rented individual or shared apartments. Due to the lack of accurate statistics on the total number of students in Kerman Province, the sample size was calculated using the infinite population formula with a 95% confidence level ($Z = 1.96$), a standard deviation of 0.5, and a permissible error of 0.05. Accordingly, the sample size was estimated to be 384 individuals; considering the possibility of data attrition, 400 participants were initially selected. After removing incomplete or invalid responses, 360 valid questionnaires (180 native and 180 non-native students) were included in the final analysis. The sampling method was convenience sampling, and participants were selected from students of universities across Kerman Province.

Inclusion criteria were as follows:

1. Enrollment in one of the universities of Kerman Province;
2. Registration in bachelor's, master's, or professional doctoral programs;
3. Completion of at least one academic semester;
4. Active enrollment during the 2024–2025 academic year.

Exclusion criteria included:

1. Withdrawal of participants from the study;
2. Incomplete questionnaires or distorted data (responses displaying unusual or patterned answering behavior).

Data collection in this study was carried out using both library-based and field-based methods. For collecting theoretical foundations and related literature, the researchers used the library method by consulting databases such as SID.ir, Magiran.com, Scholar.google.com, NCBI PubMed (ncbi.nlm.nih.gov/pubmed), and ScienceDirect.com, as well as visiting the university library and reviewing relevant theses and dissertations. For collecting data from the study population, the field method was employed through direct engagement with participants. After preparing the questionnaires, they were distributed both in-person and electronically among the statistical sample, and the collected data were subsequently analyzed. Descriptive statistics were used to describe demographic characteristics and study variables, while comparative tests such as ANOVA and MANOVA were applied to compare mean differences between groups.

Data Collection

Leisure Time Questionnaire: The Leisure Time Questionnaire developed by Wang (2019) consisting of 14 items was used. The instrument employs a five-point Likert scale ranging from “strongly agree” to “strongly disagree.” Its content validity was confirmed in Wang’s (2019) study. The questionnaire measures four dimensions: goal setting and evaluation regarding leisure, time management techniques, attitude toward leisure, and planning for leisure activities. According to Wang (2019), the Cronbach’s alpha coefficients for all subscales were above 0.81, and the reliability for all indices exceeded 0.89, indicating high internal consistency and measurement stability.

Lifestyle Questionnaire (LSQ): This questionnaire contains 70 items and aims to assess various dimensions of lifestyle, including physical health, exercise and fitness, weight control and nutrition, disease prevention, psychological health, spiritual health, social health, avoidance of drugs and narcotics, accident prevention, and environmental health. The instrument was developed and validated by Lali et al. (2012).

Responses are rated on a Likert scale. In the study by Lali et al. (2012), construct validity was confirmed through factor analysis, verifying that the LSQ is a multidimensional tool for evaluating lifestyle. Reliability was assessed using Cronbach's alpha, which can range from 0 (no reliability) to +1 (perfect reliability). The closer the obtained value is to +1, the higher the instrument's reliability. The LSQ demonstrated desirable reliability, with an overall Cronbach's alpha coefficient of 0.87, indicating strong internal consistency among its subcomponents.

Data analysis

Quantitative statistical methods were employed for data analysis. Descriptive analyses included indices such as mean, standard deviation, skewness, and kurtosis. For inferential analysis, multivariate analysis of variance (MANOVA) was conducted to compare the study variables between native and non-native student groups. All statistical analyses were performed using IBM SPSS Statistics version 24.

Findings and Results

Table 1 presents the descriptive indices of the components of leisure time. Subsequently, in Table 1, the descriptive indices of biological habits or lifestyle components are displayed.

Table 1: Descriptive indices of biological habits

Component	Group	Mean	Standard Deviation	Skewness	Kurtosis
Physical health	Native	29.92	4.51	-0.04	0.07
	Non-native	27.47	5.20	-0.06	-0.38
Exercise and fitness	Native	25.97	5.09	0.02	-0.34
	Non-native	24.01	5.67	0.04	-0.03
Weight control and nutrition	Native	25.58	4.51	-0.12	-0.09
	Non-native	24.14	4.65	-0.11	-0.06
Disease prevention	Native	26.06	4.52	0.34	-0.12
	Non-native	24.61	5.01	0.54	0.31
Psychological health	Native	26.51	5.96	-0.60	-0.05
	Non-native	24.95	4.09	0.15	0.23
Spiritual health	Native	18.51	4.85	0.41	0.11
	Non-native	17.13	3.99	-0.07	-0.19
Social health	Native	25.32	4.42	0.16	-0.04
	Non-native	24.01	3.58	0.12	0.08
Avoidance of drugs	Native	21.78	4.51	0.40	0.28
	Non-native	20.79	4.22	-0.10	0.09
Accident prevention	Native	28.69	4.60	-0.50	0.26
	Non-native	27.50	4.03	0.15	0.30
Environmental health	Native	24.80	4.74	0.31	0.05
	Non-native	23.83	4.14	-0.03	-0.14

Table 1 shows the descriptive indices of the biological habit components. In the following, Table 2 presents the descriptive indices of biological habits or leisure management components.

Table 2: Descriptive indices of leisure time management

Component	Group	Mean	Standard Deviation	Skewness	Kurtosis
Goal setting and evaluation	Native	16.06	3.24	-0.12	-0.33
	Non-native	14.98	2.50	-0.06	-0.10
Time management	Native	9.68	2.47	-0.05	0.65
	Non-native	8.87	2.49	-0.02	0.19
Attitude toward leisure	Native	9.64	2.99	0.35	-0.14
	Non-native	9.08	2.50	0.43	0.10
Planning	Native	9.73	2.75	0.20	0.50

Non-native	9.10	2.42	-0.09	-0.41
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The above table shows the descriptive indices related to the components of leisure time management. Overall, the results of the above tables indicate the descriptive indices concerning the variables of the present study. The mean and standard deviation values demonstrate appropriate data dispersion, while the skewness and kurtosis indices indicate the normality of data distribution.

To examine the differences in biological habits between native and non-native students, a one-way multivariate analysis of variance (MANOVA) was used. Similar to the previous test, a significance level of $p < 0.05$ was used to reject the null hypothesis, and partial eta squared was employed to assess the effect size. As mentioned earlier, the assumptions of the MANOVA test were first examined.

Table 3: Results of the Kolmogorov–Smirnov test for normality of biological habit components in native and non-native student groups

Component	Group	Kolmogorov–Smirnov Z Statistic	Significance Level
Physical health	Native	0.82	0.50
	Non-native	1.35	0.06
Exercise and fitness	Native	0.88	0.41
	Non-native	1.09	0.18
Weight control and nutrition	Native	1.43	0.09
	Non-native	1.55	0.14
Disease prevention	Native	1.11	0.17
	Non-native	0.74	0.63
Psychological health	Native	1.08	0.18
	Non-native	0.84	0.48
Spiritual health	Native	1.11	0.17
	Non-native	0.97	0.29
Social health	Native	1.01	0.30
	Non-native	1.08	0.18
Avoidance of drugs	Native	1.17	0.14
	Non-native	0.88	0.41
Accident prevention	Native	0.79	0.55
	Non-native	1.04	0.32
Environmental health	Native	1.02	0.30
	Non-native	0.95	0.32

According to Table 3, the Kolmogorov–Smirnov Z statistic shows that the distribution of biological habit components among the two groups is normal.

Table 4 reports the results of the multivariate analysis of variance (MANOVA).

Table 4: Results of the Multivariate Analysis of Variance (MANOVA) for Biological Habit Components Between Groups

Test	Value	F	Df1	Df2	p	Partial Eta Squared
Pillai's Trace	0.14	5.66	10	349	0.001	0.24
Wilks' Lambda	0.86	—	—	—	—	—
Hotelling's Trace	0.16	—	—	—	—	—
Roy's Largest Root	0.16	—	—	—	—	—

According to Table 4, the F statistic of the multivariate analysis of variance for differences between students in the biological habit components (5.66) is significant at the 0.001 level. Therefore, it can be concluded that there is a significant difference between the two groups in terms of biological habit components. To determine in which of the biological habit components the groups differ, Table 5 presents

the results of the follow-up MANOVA analysis. Moreover, as shown in Table 4, the partial eta squared indicates that group membership accounts for 24% of the variance in the dependent variables.

Table 5: Results of the Follow-Up MANOVA for Examining Group Differences in Biological Habits

Component	SS Between Groups	SS Error	MS Between Groups	MS Error	F	p	Eta Squared
Physical health	542.67	7296.92	542.67	20.38	26.62	0.01	0.15
Exercise and fitness	346.13	8720.86	346.13	24.36	14.20	0.01	0.13
Weight control and nutrition	186.33	8309.99	186.33	23.21	8.03	0.01	0.12
Disease prevention	187.77	10258.87	187.77	28.65	6.55	0.01	0.11
Psychological health	219.33	9326.59	219.33	26.05	8.41	0.01	0.12
Spiritual health	172.22	5301.75	172.22	14.80	11.62	0.01	0.13
Social health	157.34	7861.31	157.34	21.95	7.16	0.01	0.20
Avoidance of drugs	88.01	6041.94	88.01	16.87	5.21	0.05	0.14
Accident prevention	127.21	7821.18	127.21	21.84	5.82	0.01	0.16
Environmental health	86.04	5981.85	86.04	16.70	5.15	0.05	0.14

According to Table 5, the F statistic is significant for the components of physical health (26.62), exercise and fitness (14.20), weight control and nutrition (8.03), disease prevention (6.55), psychological health (8.41), spiritual health (11.62), social health (7.16), avoidance of drugs (5.21), accident prevention (5.82), and environmental health (5.15). Based on the mean values of these components reported in the descriptive tables, it can be concluded that the scores of native students were higher than those of non-native students in these dimensions.

To examine the differences in leisure time management between native and non-native students, a one-way multivariate analysis of variance (MANOVA) was also conducted. Similar to the previous test, a significance level of $p < 0.05$ was used to reject the null hypothesis, and partial eta squared was used to assess effect size. As previously stated, the assumptions of MANOVA were tested before the main analysis.

Table 6: Results of the Kolmogorov–Smirnov Test for Normality of Leisure Time Management Components in Native and Non-Native Student Groups

Component	Group	Kolmogorov–Smirnov Z Statistic	Significance Level
Goal setting	Native	1.12	0.10
	Non-native	0.78	0.09
Time management technique	Native	1.11	0.13
	Non-native	1.13	0.17
Attitude toward leisure	Native	0.80	0.06
	Non-native	1.09	0.05
Planning	Native	1.45	0.11
	Non-native	1.70	0.40

According to Table 6, the Kolmogorov–Smirnov Z statistics indicate that the distribution of leisure time management components among the two groups is normal. Table 7 presents the results of the multivariate analysis of variance.

Table 7: Results of the Multivariate Analysis of Variance (MANOVA) for Leisure Time Management Components Between Groups

Test	Value	F	Df1	Df2	p	Partial Eta Squared
Pillai's Trace	0.05	5.12	4	355	0.001	0.55
Wilks' Lambda	0.94	—	—	—	—	—

Hotelling's Trace	0.06	—	—	—	—	—
Roy's Largest Root	0.06	—	—	—	—	—

According to Table 7, the F statistic of the multivariate analysis of variance for differences between students in leisure time management components (5.12) is significant at the 0.001 level. Therefore, it can be concluded that there is a significant difference between the two groups in terms of leisure time management components. To determine in which of the leisure management components the groups differ, Table 8 presents the results of the follow-up MANOVA analysis. Furthermore, as shown in Table 8, the partial eta squared indicates that group membership explains 55% of the variance in the dependent variables.

Table 8: Results of the Follow-Up MANOVA for Examining Group Differences in Leisure Time Management

Component	SS Between Groups	SS Error	MS Between Groups	MS Error	F	p	Eta Squared
Goal setting	103.46	3492.30	103.46	9.75	10.60	0.01	0.29
Time management technique	60.02	2248.63	60.02	6.28	9.55	0.01	0.26
Attitude toward leisure	26.77	2455.82	26.77	6.86	4.05	0.01	0.11
Planning	36.73	2162.92	36.73	6.04	6.08	0.01	0.17

According to Table 8, the F statistic is significant for the components of goal setting (10.60), time management technique (9.55), attitude toward leisure (4.05), and planning (6.08). Based on the mean values of these components reported in the descriptive tables, it can be concluded that the scores of native students were higher than those of non-native students in these dimensions.

Discussion and Conclusion

The findings of the present study revealed significant differences between native and non-native students in several components of biological habits and leisure time management. Native students scored higher in dimensions such as physical health, social health, spiritual health, disease prevention, and psychological well-being, while non-native students demonstrated slightly better performance in physical exercise and group leisure activities. These findings underscore the influence of living conditions, social support, and environmental context on the formation of health-related and behavioral patterns among university students. The observed disparities reflect not only individual differences but also the systemic challenges faced by students living away from home, particularly those residing in dormitories or temporary housing facilities (2, 3).

The higher scores of native students in social and spiritual health can be attributed to their proximity to family networks, familiar social environments, and community-based support systems. Prior studies have emphasized that family relationships serve as a crucial source of emotional and moral stability, shaping students' mental well-being and coping mechanisms (10, 11). Students who maintain regular contact with family members and engage in supportive peer interactions are better equipped to manage stress, maintain positive affect, and sustain healthier lifestyles. In contrast, non-native students often experience social isolation and reduced emotional support, which may lead to lower life satisfaction and decreased motivation (12). This aligns with research showing that students who relocate for academic purposes are more susceptible to anxiety, loneliness, and maladaptive coping strategies (13, 14).

Spiritual health emerged as another dimension where native students reported higher mean scores. This result resonates with the findings of (1), who demonstrated that strong spiritual well-being is positively associated with academic achievement and psychological resilience among Iranian students. Similarly, (15) found that spiritual vitality significantly predicts mental health and general well-being among native students in Iranian universities, while dormitory residents showed lower levels of spiritual engagement. The discrepancy may be explained by the loss of access to family-based religious practices and spiritual communities among non-native students. In Iran's cultural context, spiritual activities—such as communal prayer, participation in religious gatherings, and engagement in cultural rituals—often occur within family or local community networks. When students leave these networks, their connection to spiritual and moral frameworks may weaken, reducing the protective effects of spirituality on health and well-being.

The findings related to physical health and disease prevention also showed significant advantages for native students. Consistent with previous studies, proximity to home likely facilitates access to nutritious food, consistent sleep patterns, and family monitoring—all of which contribute to better health maintenance (5, 6). Non-native students, however, often experience irregular meal schedules, limited access to healthy foods, and suboptimal living conditions in dormitories or shared accommodations. These factors may lead to lower scores in domains such as physical health and disease prevention. The results align with (7), who found that international students in Malaysia had higher rates of sleep disorders and poorer physical regulation due to environmental and psychosocial stressors. Likewise, (19) reported that foreign students in Hungary exhibited poorer subjective health and sleep quality compared to their native counterparts, suggesting that displacement contributes to physiological and psychological dysregulation.

Nevertheless, in the current study, non-native students showed relatively better performance in “exercise and fitness” and “group leisure activities,” which may stem from differences in lifestyle structure. Living in dormitories provides opportunities for social engagement and participation in group sports or recreational activities, which may not be as common among local students who often balance academic work with family responsibilities. This finding aligns with (9), who noted that active leisure management, particularly group-based recreational activities, enhances psychological well-being and mitigates stress among university students. Moreover, dormitory environments can foster peer-based recreational networks that, despite lacking familial support, provide alternative sources of social interaction and leisure fulfillment (4). Therefore, while non-native students may face challenges in other areas of health, they may simultaneously develop adaptive strategies to utilize leisure as a coping mechanism against stress and isolation.

The psychological health component also revealed significant differences between groups, favoring native students. This outcome can be explained by the greater emotional security and social stability associated with living in one's home environment. As (11) pointed out, familial presence acts as a buffer against stress and anxiety, enhancing young people's emotional regulation and mental resilience. Conversely, (18) showed that international or non-local students face higher risks of psychological distress, including depression and suicidal ideation, due to academic pressure and social disconnection. Such results underline the significance of context-sensitive interventions in higher education institutions, emphasizing mental health literacy, peer mentorship, and accessible counseling services—particularly for displaced or dormitory students.

The findings on social health further emphasize that the sense of belonging and community engagement play a central role in shaping students' well-being. (10) highlighted the protective role of family, school, and

peer relationships in maintaining children's and adolescents' mental health. In the context of higher education, these relationships extend to social integration within the campus environment. Native students, who often maintain pre-existing social networks, enjoy greater stability in interpersonal relations, whereas non-native students must reconstruct these networks in unfamiliar settings. The process of social adjustment, as (17) described, can be particularly challenging for non-native or immigrant students, who may perceive a lack of cultural and emotional support. These disparities highlight the need for social inclusion initiatives to foster equitable well-being among student populations.

From an educational perspective, the results confirm that lifestyle quality is deeply intertwined with academic performance. The systematic review by (16) revealed that academic success in higher education depends not only on cognitive and instructional factors but also on sleep, nutrition, and mental health. In this regard, the higher lifestyle scores among native students can partially explain their more consistent academic engagement. Conversely, the lifestyle disruptions observed among non-native students, including inadequate sleep, poor nutrition, and emotional strain, may negatively affect concentration and productivity. This interpretation aligns with (20), who found that stress and sleep problems significantly reduce academic performance among both international and domestic students. Similarly, (21) reported that family support and a positive learning environment strongly correlate with students' satisfaction and educational outcomes, reinforcing the notion that social context and health behaviors are inseparable from academic functioning.

The present findings are also supported by cross-cultural evidence. For example, (14) observed that immigrant students in the United States exhibit higher levels of anxiety and depression when they lack language proficiency or a sense of belonging. Likewise, (13) identified that Indigenous students in Canada suffer from greater distress and substance use issues compared to their non-Indigenous peers, primarily due to social displacement and marginalization. These international parallels suggest that the challenges faced by non-native students in Iran—though shaped by local cultural contexts—are part of a broader global phenomenon concerning student migration and adjustment.

The observed differences in disease prevention behaviors also merit attention. Native students, benefiting from family oversight and stable routines, often adhere more strictly to preventive health behaviors such as medical checkups and hygiene maintenance. In contrast, non-native students may neglect these practices due to time constraints, lack of awareness, or limited access to healthcare facilities. This interpretation aligns with (2), who found that dormitory students reported less adherence to preventive health measures, leading to an increased risk of illness. Therefore, promoting health education within dormitory settings is essential for bridging this behavioral gap.

Another noteworthy finding concerns leisure time management, where native students demonstrated superior scores in goal-setting, time management, and planning. This indicates a higher capacity for structured organization of non-academic activities. (9) emphasized that efficient leisure management reduces the risk of leisure boredom and maladaptive behaviors such as excessive internet use. (4) further highlighted that meaningful leisure fosters creativity and self-development. The weaker performance of non-native students in this area may reflect difficulties in balancing academic and personal demands in new environments, as well as limited access to recreational resources.

The pattern of results also underscores the interconnectedness of psychological and social dimensions of health. (8) demonstrated that perfectionistic tendencies and controlling environments heighten stress

responses, which could explain the greater vulnerability of non-native students, who often feel pressured to succeed academically despite reduced support systems. (3) found similar trends among students in Tehran, noting that non-native students reported lower quality of university life due to stress and poor adaptation. This cumulative evidence suggests that institutional policies should not only address academic development but also encompass psychosocial and environmental well-being.

Overall, the present study contributes to a growing body of literature emphasizing that health-related disparities between native and non-native students are multi-causal, involving individual, familial, institutional, and environmental factors (12, 19). The results corroborate existing research demonstrating that non-native students often face cumulative disadvantages due to relocation, isolation, and reduced access to supportive resources. By integrating the findings from lifestyle and leisure domains, this study provides a comprehensive understanding of how student displacement influences well-being and behavior in higher education contexts.

Despite its valuable findings, the present study faced several limitations. First, the use of self-report questionnaires may have introduced social desirability bias or recall inaccuracies in participants' responses. Second, the study was conducted in a single Iranian province, which may limit the generalizability of the findings to other cultural or institutional settings. Third, although the sample size was adequate, the cross-sectional design restricts causal inferences about the relationship between lifestyle factors and well-being outcomes. Additionally, the study did not control for variables such as socioeconomic status, academic discipline, or year of study, which could influence both lifestyle and leisure behaviors. Future research using longitudinal and mixed-method approaches could yield deeper insights into the dynamic interactions among these variables.

Future studies should adopt longitudinal designs to examine how lifestyle and leisure patterns evolve throughout students' academic careers. It is recommended that future research also investigate the mediating and moderating roles of variables such as stress management, social connectedness, and digital media use in the relationship between living conditions and well-being. Comparative studies across multiple universities and provinces would enhance the external validity of results, while qualitative methods—such as interviews or focus groups—could provide richer contextual understanding of students' lived experiences. Researchers are also encouraged to examine the effectiveness of institutional interventions, such as wellness programs, leisure education workshops, and dormitory counseling services, in mitigating lifestyle disparities between native and non-native students.

Universities should implement comprehensive health promotion programs that address both physical and psychological aspects of student life. Special attention should be given to non-native and dormitory students through initiatives that foster social integration, enhance access to recreational facilities, and provide nutritional and mental health support. Academic advisors and dormitory supervisors should collaborate to identify at-risk students and guide them toward balanced lifestyles. Institutions can also organize workshops on time management, sleep hygiene, and leisure engagement to improve students' self-regulation and stress resilience. Ultimately, adopting a holistic approach to student welfare—integrating educational, social, and health perspectives—can create a more inclusive and supportive university environment that promotes both academic success and well-being.

Acknowledgments

The authors express their deep gratitude to all participants who contributed to this study.

Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

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