

Original Article



Healthy Lifestyle Habits Among Students at the University of Seville, Spain

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Abstract

Background: There is a growing interest in the study of healthy lifestyles due to their innumerable benefits. Several studies have shown that students tend to adopt less healthy lifestyles at the beginning of their university careers. This study explored the perceptions of undergraduate students at the University of Seville, Spain, about their lifestyle habits.

Methods: The study design was a descriptive survey, and a specially designed questionnaire was administered to a sample of 1.478 students. Descriptive and inferential statistics were used for data analysis using SPSS software, version 27.

Results: The surveyed students considered that they have healthy lifestyle habits, although with some weaknesses in the development of certain habits, which were exacerbated during exam periods. Men reported better sleep and physical activity habits than women, while women considered their diet to be healthier ($P=0.001$). It was further found that healthier lifestyle habits depend on the education level of the mother ($P=0.001$).

Conclusion: It can be concluded that it is important to implement educational policies aimed at promoting and advising students on healthy lifestyle habits. Such policies would be especially useful before the start of exam periods when certain habits began to deteriorate.

Keywords: Health promotion, Health education, Students, Healthy habits

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Introduction

There is currently a growing interest in the study of healthy lifestyle habits given their innumerable benefits (1,2), which include proper cognitive development, improved memory and attention, higher levels of self-esteem, and higher rates of physical and mental health (3).

Unhealthy habits can have negative consequences not only on academic performance (3) but also on physical and psychological well-being, (4) which can lead to students' dropping out of university and a lower quality of life (5).

The institutional promotion of actions that encourage the adoption of healthy lifestyle habits will result in more beneficial routines and habits and so promote the physical and mental well-being of students (6,7). This is truly important since the adoption of certain harmful lifestyle habits can last throughout adulthood if they are not resolved (8).

Students tend to adopt less healthy lifestyles at the start of their university careers as a consequence of the

numerous changes in their environment (1) such as changes in their reference groups (family and friends) and new social relationships (e.g., the stress induced by social pressure, competition, and the like), which can lead to health problems such as lack of sleep and reduced psychological well-being (9,10).

In terms of sleep habits, a high percentage of university students in the United States do not get the minimum eight hours of sleep per night required to perform their daily activities properly (11). Numerous studies suggested that poor sleep habits have a negative effect on cognitive performance in students (12). The adoption of good sleep habits is the key driver of improved academic performance in university students (13).

A large proportion of university students have unhealthy eating habits (14), which are further exacerbated during exam periods (15) since stress accounts for the negative effect on eating habits in students (16).

Several studies have found that women are more aware



of their diets, which leads them to adopt healthier eating habits (14). However, women also reported being more easily and frequently driven by their emotional state when eating by choosing products high in sugar and calories unlike men (17).

In this regard, recent research has reported gender differences in healthy lifestyle habits among university students. Men tended to have better sleep habits (18) and were physically more active than women (7).

Another factor that affects the adoption of healthy lifestyle habits is the student's field of study. According to recent research findings, students in health-related areas have higher levels of physical activity than engineering and law students (7).

Parental figures play an essential role in the transmission of certain healthy lifestyle habits during childhood and their subsequent development in adulthood (19). It is also worth noting that the higher the educational and socioeconomic level of the parents, the healthier the lifestyle habits the university student will adopt (10).

Studies conducted in Spanish universities have demonstrated that university students do not have healthy eating habits and do not meet the minimum physical activity requirements (20,21). This led us to study the perceptions of students at the University of Seville of their lifestyle habits during term time and also during exam periods. We also explored the effect of different socio-demographic variables (e.g., gender, work situation, shift (pattern of attendance), and so on) on the practice of healthy lifestyle habits. Hence, the present study aimed to enhance the students' understanding of healthy lifestyles at the University of Seville in order to develop and implement educational policies that educate and advise them regarding the adoption of healthier habits to improve their quality of life.

The main objective of this study was to analyze the perceptions of students at the University of Seville of their lifestyle habits. To this end, the following specific objectives were determined:

- To examine students' perceptions of lifestyle habits according to the stage of the academic year: term time or exam period.
- To identify differences in students' perceptions of their lifestyle habits according to gender, the field of study, shift (morning/afternoon), work situation, and parents' level of education.

Materials and Methods

This study used a descriptive-analytic method with a non-experimental (ex post facto) design (22).

Descriptive and inferential statistics were used through SPSS software, version 27. For the descriptive statistics, means and standard deviation were used. For the inferential statistics, the Kolmogorov-Smirnov test was first applied to check that the sample was normally distributed, followed by the non-parametric Kruskal-Wallis H test for more than two independent samples and

the Mann-Whitney U-test for two independent samples, respectively. In addition, effect sizes were calculated using the squared correlation coefficient (23).

The study population included all undergraduate students (N = 48 039) enrolled at the University of Seville during the 2019-2020 academic year (24). To calculate the sample, the formula for infinite populations (> 10 000 subjects) was used: $n = z^2 P*Q/E^2$. With a margin of error of 3.3% for a 97% confidence interval, a total of 1.478 students were obtained. Simple random sampling was used with proportional allocation according to sex and field of study. The inclusion criterion for the sample included being over 18 years old, being undergraduate students from the 1st to the 4th year or to the 5th or the 6th in specific degrees such as medicine, architecture, and pharmacy, and studying at the University of Seville. Students with Master's degrees, Ph. D students, as well as students who had enrolled the educational programs before the academic year 2014-2015 were excluded from the study (Table 1).

The questionnaires were completed both online, using Google Forms, and in person. Students voluntarily participated in the study by completing the questionnaire. Anonymity and confidentiality in responses were preserved at all times. The questionnaire was previously approved by the Ethical Committee of the Socio-educational Research in Action Group (HUM-929).

A specific questionnaire was designed for the present study. It had two main dimensions: Healthy lifestyle habits during the examination period and healthy lifestyle habits during the rest of the academic year. It consisted of a total of 30 items rating on a five-point Likert-type response scale (1 = never; 2 = almost never; 3 = sometimes; 4 = almost always; and 5 = always). Reliability was calculated using Cronbach's alpha internal consistency coefficient as well as obtaining values close to unity for the questionnaire as a whole (0.943) and its two constituent dimensions (a. $\alpha = 0.953$ and b. $\alpha = 0.960$).

Exploratory factor analysis with the Principal Component method was used to evaluate the construct validity after checking sampling adequacy with the Kaiser-Meyer-Olkin test and Bartlett's test of sphericity (N = 1.478). Both dimensions enjoyed adequate measures of sampling adequacy, rejecting the sphericity hypothesis with optimal statistical significance in all cases ($P = 0.001$). In addition, item saturation was achieved on factors with a value above 0.4 (25).

Results

Term Time (Excluding Exam P)

Application of the U-test revealed statistically significant differences according to the gender of the respondents for certain items on this dimension (Table 2). Large effect sizes indicated that women consider their diet to be healthy and eat according to their emotional state, while intermediate effect sizes suggested that those attending classes in the morning adopt healthier habits than those attending the afternoon classes.

Table 1. Demographic Characteristics of the Subjects

Variable	Category	Percent
Gender	Male	48.05
	Female	51.95
Field of study	Sciences	7.6
	Health Sciences	15.3
	Male	4.49
	Female	10.81
	Arts and Humanities	12.53
	Male	4.93
	Female	7.60
	Engineering and Architecture	26.27
	Male	19.10
	Female	7.17
	Social and Legal Sciences	38.3
	Male	15.48
Female	22.82	
Age	Under 20	23.9
	20 to 25	70.6
	26 to 30	4
	31 to 35	0.9
	36 to 40	0.3
	Over 41	0.3
Year of course	1	16
	2	32.2
	3	22.5
	4	24.3
	5	3.5
	6	1.5
Shift	Morning	54.4
	Afternoon	17.4
	Morning and afternoon	28.2
Average mark	Fail	1.3
	Pass	35.8
	Very good	59.8
	Outstanding	3.1
Lives in	Family home	61.4
	Student flat	32.3
	Hall of residence	3.4
	Independent	2.6
	Other	0.3
Work situation	I study and am not looking for work.	56.9
	I study and work at the same time.	27.1
	I am a student and looking for work.	16

Differences According to Work Situation, Education Level of the Mother, and Year of Course

Application of the H-test revealed statistically significant differences according to the above-mentioned dimensions, with an intermediate effect size (Table 3).

Examination Periods

The U-test was applied to check more specifically differences arising according to the exam period or term time. As Table 4 depicts, the sharpest differences were observed in the consumption of sugary products and considering their diet to be healthy in exam period and term period, respectively.

Non-significant Differences

According to Table 4, no significant differences were observed in the practice of healthy habits between the exam period and term time with respect to the average mark of the student ($P=0.835$ and $P=0.135$, respectively) or the educational level of the father ($P=0.648$ and $P=0.677$, respectively).

Table 5 indicates that significant differences were found in students' practices of healthy habits in terms of the field of study, but the effect size was not important

Discussion

This study aimed to analyze the perceptions of students at the University of Seville of their lifestyle habits. It was found that a high percentage of students report maintaining healthy lifestyle habits. For example, they considered their diets to be healthy, ate at least four meals a day, drank at least 2 L of water a day, ate five pieces of fruit and vegetables, and did not usually skip meals. They also exercised at least three times a week and slept a minimum of seven hours a night. This differs from the findings of other studies conducted in Spain (20), Lebanon (26), and Chile (14).

Nevertheless, the students practiced a number of unhealthy eating habits over the course of the academic year, which is consistent with previous studies (15). These students consumed high-calorie and sugary products, engaged in emotional eating, and ate fast/processed food on a weekly basis.

During exam periods, university students adopted a less healthy set of eating habits than at other times of the academic year, consuming more high-sugar products, and fast and processed food. These results are consistent with research conducted in Belgian and Greek universities (15,27).

It was observed that female students considered their diet to be healthier, as reported by (14), although in the present study, interestingly, the same female students reported emotional eating to a greater extent compared to males.

Men reported more physical activity and having less difficulty falling asleep. These results have also been found in previous research, with men reporting better quality of

Table 2. Descriptive Statistics for Students’ Perceptions of Healthy Lifestyle Habits during Term Time (Excluding Exam Periods) and Inferential Statistics According to Gender and Shift

Item	Descriptive Statistics		Inferential Statistics							
			Gender				Shift			
	X̄	SD	U	P	Mean Rank	(E _r ²)	H	P	Mean Rank	(E _r ²)
I consider that my diet is healthy.	3.74	0.983	142774.000	0.001	M=540.40 F=875.23	0.152 Large effect	42.680	0.001	M=797.66 M and A=651.97	0.028 Small effect
I eat at least 4 meals a day.	3.84	1.198	211271.000	0.001	M=651.53 F=792.74	0.028 Small effect	91.260	0.001	M=805.51 A=522.41	0.061 Intermediate effect
I eat fast / processed food.	2.67	0.824								
I eat 5 pieces of fruit and/or vegetables a day	2.73	1.271								
I drink at least 2 L of water a day.	3.66	1.204	203788.500	0.001	M=824.56 F=665.25	0.037 Small effect				
I sleep at least 7 hours per night.	3.60	1.099	215236.500	0.001	M=810.16 F=678.72	0.024 Small effect	10.086	0.006	A=805.16 M=717.44	0.005 Small effect
I have difficulty staying awake during the day.	2.30	1.024								
I have difficulty falling asleep.	2.39	0.956	163586.000	0.001	M=574.13 F=850.77	0.104 Intermediate effect	172.289	0.001	A=1039.73 M and A=628.71	0.115 Intermediate effect
I maintain good daily personal hygiene.	4.79	0.561								
I engage in physical exercise at least 3 times a week.	3.27	1.408	196425.000	0.001	M=841.65 F=656.82	0.046 Small effect				
I tend to eat according to my emotional state.	2.97	1.190	102725.000	0.001	M=474.80 F=919.29	0.271 Large effect				
I tend to skip meals.	2.38	1.242	235796.500	0.002	M=768.21 F=702.39	0.008 No effect	112.903	0.001	A=983.63 M=669.17	0.075 Intermediate effect
I eat food with high sugar content (pastries, sweets, sugary soft drinks, and so on).	2.57	1.006	237252.500	0.002	M=693.90 F=760.38	0.007 No effect				
I eat high calorie products (chips, snacks, high-fat sauces, and so on).	2.67	0.980								

Note. X̄: Mean (scale 1 to 5); SD: Standard deviation; U: Mann-Whitney U test; P: Significance level; M: Male; F: Female; H: Kruskal-Wallis H-test; M: Morning; A: Afternoon; M and A: Morning and afternoon; E_r²: Squared correlation coefficient.

Table 3. Statistical Differences According to Work Situation, Educational Level of the Mother, and Year of Course

Item	H	P	Mean Rank	(E _r ²)
Work Situation				
I sleep at least 7 hours per night.	64.113	0.001	NW=801.90 WS=603.89	0.042 Intermediate effect
I have difficulty staying awake during the day.	78.886	0.001	WS=888.05 NW=671.67	0.052 Intermediate effect
Mother’s Education Level				
I eat fast / processed food.	112.979	0.001	NS=1235.41 Ph.D=455.90	0.073 Intermediate effect
Year of Course				
I consider that my diet is healthy.	146.744		4th year=845.08 1st year=501.47	0.096 Intermediate effect

Note. H: Kruskal-Wallis H-test; P: Significance level; E_r²: Squared correlation coefficient; NW: Studying and not looking for work; WS: Working and studying; NS=No studies; Ph.D: Doctor of philosophy.

Table 4. Descriptive and Inferential Statistics for Students' Perceptions of Healthy Lifestyle Habits During the Examination Period or Term Time

Item	Descriptive Statistics		Inferential Statistics			
			Examination Period or Term Time			
	X	SD	U	P	Mean Rank	(E _k ²)
I consider that my diet is healthy.	2.65	0.921	469737.500	0.001	E=1057.03 T=1899.40	0.244 Large effect
I eat at least 4 meals a day.	3.99	1.017	1036192.500	0.013	E=1514.45 T=1440.55	0.002 No effect
I eat fast / processed food.	3.30	1.143	742570.500	0.001	E=1704.24 T=1240.34	0.077 Intermediate effect
I eat 5 pieces of fruit and/or vegetables a day.	2.47	1.232	960311.500	0.001	E=1389.00 T=1559.06	0.011 Small effect
I drink at least 2 litres of water a day.	3.58	1.249				
I sleep at least 7 hours per night.	3.16	1.257	871529.000	0.001	E=1328.57 T=1621.83	0.031 Small effect
I have difficulty staying awake during the day.	2.59	1.070	907158.00	0.001	E=1596.47 T=1353.36	0.022 Small effect
I have difficulty falling asleep.	2.65	1.186	966413.000	0.001	E=1559.92 T=1393.42	0.01 Small effect
I maintain good daily personal hygiene.	4.72	0.628	1027698.500	0.001	E=1434.72 T=1516.23	0.003 No effect
I engage in physical exercise at least 3 times a week.	2.86	1.447	913338.000	0.001	E=1356.97 T=1594.46	0.02 Small effect
I tend to eat according to my emotional state.	3.12	1.161	1003196.000	0.001	E=1531.94 T=1418.17	0.005 No effect
I tend to skip meals.	2.37	1.121				
I eat food with high sugar content (pastries, sweets, sugary soft drinks, and so on).	3.26	0.883	664359.000	0.001	E=1763.39 T=1188.41	0.115 Large effect
I eat high calorie products (chips, snacks, high-fat sauces, and so on).	2.96	1.363	955276.500	0.001	E=1563.48 T=1385.65	0.012 Small effect

Note. X: Mean (scale 1 to 5); SD: Standard deviation; U: Mann-Whitney U test; P: Significance level; E_k²: Squared correlation coefficient; E: Exams; T: Term time.

Table 5. Descriptive and Inferential Statistics for Students' Perceptions of Healthy Lifestyle Habits According to the Field of Study

Item	Field of Study			
	H	P	Mean Rank	(E _k ²)
I consider that my diet is healthy.	9.929	0.42	HS=773.84 AH=676.25	0.004 No Effect
I eat at least 4 meals a day.	13.522	0.009	HS=787.81 AH=658.50	0.006 No Effect
I eat five pieces of fruit and vegetables a day.	9.509	0.050	HS=792.94 AH=703.10	0.004 No Effect
I engage in physical exercise at least 3 times a week.	51.219	0.001	HS=884.22 S=664.97	0.032 Small effect

Note. H: Kruskal-Wallis H-test; P: Significance level; E_k²: Squared correlation coefficient; HS: Health science; AH: Arts and Humanities; S: Science.

sleep and physical activity habits than women (18).

Statistically significant differences were found in the students' adoption of certain eating and sleeping habits according to their shift. Specifically, those enrolled in morning classes reported better eating habits, eating four meals a day, and skipping fewer meals than students enrolled in afternoon classes. These results seem to be consistent with other research in which university students who get up later tended to skip breakfast and adopted poorer lifestyle habits (28).

Moreover, students enrolled in the afternoon shift reported greater difficulties in falling asleep at night. Those who worked at the same time also reported sleeping

less than seven hours a night and having more difficulty staying awake during the day than those who only studied and were not looking for work.

In addition, students whose mothers had no education reported eating more fast/processed food than those whose mothers had a Ph.D degree. This is consistent with research by Schmidt who found that the education level of both parents played a critical role in the adoption of healthy lifestyle habits by students (10). In the present study, however, we did not find significant differences in the adoption of certain lifestyle habits according to the education level of the father. It would be interesting to explore the reasons for these differences in future research.

Finally, it is worth highlighting the perception of final-year (fourth year) students who were more likely than first-year students to consider their diet to be healthy. Other authors found that medical students at more advanced levels of their education, specifically those in the third and fourth years as opposed to the second year, displayed healthier lifestyle habits (29). In contrast, others found no significant differences according to the level of their course (30).

While numerous research studies have highlighted the relationship between the practice of certain healthy lifestyle habits and academic achievement (2), this study found no significant differences between the adoption of healthy lifestyle habits and the average marks of the student.

Although this study found significant differences in the practice of lifestyle habits according to the general field of study in which the student was enrolled, the effect size was not significant. While several studies have shown that there is no relationship between lifestyle habits and the student's field of study (7), other research indicated that those fields of study with components that are proximate to particular lifestyle habits such as nutrition, health, physical activity, and sport sciences did have a positive effect on students when it comes to adopting healthy lifestyles (31).

When interpreting the results, it should be borne in mind that this study does not observe or focus on healthy lifestyle habits but rather on the students' perception of their adherence to them. Nevertheless, the obtained results have important implications for the promotion of health among university students.

Conclusion

We consider that students at the University of Seville maintain healthy lifestyle habits in general although with shortcomings in the practice of certain habits, especially during exam periods. The evidence from this study highlights the importance of developing and implementing educational policies aimed at promoting and advising on healthy lifestyles among students at the University of Seville. Such policies would be especially useful before the start of exam periods when we observed that certain habits deteriorated.

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Conflict of Interests

There was no conflict of interests in this study.

Ethical Permissions

Anonymity and confidentiality in responses were preserved at all times. The questionnaire was previously approved by the Ethical Committee of the Socio-educational Research in Action Group (HUM929).

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