Original Article

TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

NURSING STUDENTS' LIFESTYLE AND RELATED FACTORS

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ABSTRACT

Objective: to determine nursing students' lifestyle at a university in Mexico, according to personal factors and previous behaviors of Nola J. Pender's Health Promotion Model.
Method: this is a cross-sectional study developed at a public university of Minatitlán, Veracruz, Mexico, in 2019, with nursing students enrolled in the curricular internship course, totaling 130. Data were collected that include sociodemographic, clinical and lifestyle and behavior characteristics through the Health-Promoting Lifestyle Profile I. We used Student's t-tests, ANOVA and Pearson's correlation for the analyses.
Results: of the 130 participants, 92 (70.8%) were classified as healthy lifestyle and 38 (29.2%) had a moderately healthy lifestyle. Among the scale domains, the physical activity domain was the one with the lowest score. Negative correlations were found between the self-actualization domain and clinical variables, such as blood pressure, Body Mass Index and waist circumference, and also between this domain and the time of cell phone and television use.
Conclusion: the lifestyle general classification of most participants was healthy, but the analyzes of the individual domains demonstrate the need for political and clinical interventions that influence nursing students' health-promoting behaviors.

DESCRIPTORS: Lifestyle. Healthy lifestyle. Nursing students. Education in nursing. Health promotion.

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ESTILO DE VIDA DE ESTUDANTES DE ENFERMAGEM E FATORES RELACIONADOS

RESUMO

Objetivo: determinar o estilo de vida de estudantes de enfermagem de uma Universidade no México, segundo fatores pessoais e comportamentos anteriores do Modelo de Promoção da Saúde de Nola J. Pender.
Método: estudo transversal desenvolvido em uma Universidade Pública de *Minatitlán*, Veracruz, México, no ano 2019, com os estudantes de enfermagem matriculados na disciplina de estágio curricular, totalizando 130. Coletaram-se dados que incluem características sociodemográficas, clínicas e de estilo de vida e comportamento por meio da *Health-Promoting Lifestyle Profile I*. Utilizaram-se os testes T de *Student,* Anova e correlação de *Pearson* para as análises.
Resultados: dos 130 participantes, 92 (70,8%) foram classificados com estilo de vida saudável e 38 (29,2%) obtiveram estilo de vida moderadamente saudável. Entre os domínios da escala, o de exercício foi o de menor pontuação. Constataram-se correlações negativas entre o domínio autorrealização e variáveis clínicas, tais como pressão arterial, índice de massa corpórea e circunferência abdominal, e também entre esse domínio e o tempo de uso de celular e televisão.
Conclusão: a classificação geral do estilo de vida da maioria dos participantes foi saudável, todavia as análises dos domínios individuais demonstram a necessidade de intervenções políticas e clínicas que influenciem os comportamentos promotores de saúde dos estudantes de enfermagem.

DESCRITORES: Estilo de vida. Estilo de vida saudável. Estudantes de enfermagem. Educação em enfermagem. Promoção da saúde.

ESTILO DE VIDA DE LOS ESTUDIANTES DE ENFERMERÍA Y FACTORES RELACIONADOS

RESUMEN

Objetivo: determinar el estilo de vida de los estudiantes de enfermería de una universidad de México, según factores personales y conductas previas del Modelo de Promoción de la Salud de Nola J. Pender.
Método: estudio transversal desarrollado en una Universidad Pública de Minatitlán, Veracruz, México, en el año 2019, con estudiantes de enfermería matriculados en la disciplina de pasantía curricular, que suman 130. Los datos que incluyen características sociodemográficas, clínicas y de estilo de vida y de comportamiento se recopilaron utilizando el Health-Promoting Lifestyle Profile I. Usamos la prueba t de Student, ANOVA y la correlación de Pearson para los análisis.
Resultados: de los 130 participantes, 92 (70,8%) fueron clasificados con estilo de vida saludable y 38 (29,2%) con estilo de vida moderadamente saludable. Entre los dominios de la escala, el ejercicio tuvo la puntuación más baja. Se encontraron correlaciones negativas entre el dominio de autorrealización y variables clínicas, como la presión arterial, el índice de masa corporal y la circunferencia de la cintura, y también entre este dominio y el tiempo de uso del teléfono celular y la televisión.
Conclusión: la clasificación general del estilo de vida de la mayoría de los participantes fue saludable, sin embargo, los análisis de los dominios individuales demuestran la necesidad de intervenciones políticas y clínicas que influyan en los comportamientos promotores de salud de los estudiantes de enfermería.

DESCRIPTORES: Estilo de vida. Estilo de vida saludable. Estudiantes de enfermería. Educación en enfermería. Promoción de la salud.

INTRODUCTION

Lifestyle refers to the way individuals, families and societies live, in which psychological, social, cultural and economic variables intervene. Lifestyle can be healthy or unhealthy, being associated with a set of behaviors such as physical activity, diet, stress control or use of substances harmful to health[1].

Nola J. Pender's Health Promotion Model (HPM) names healthy behaviors as health-promoting behaviors. Pender elucidates how personal, biological, psychological or sociocultural factors, as well as previous behavior or experience, affect cognitions related to a specific behavior. This understanding helps health professionals in understanding which factors have contributed, or not, to promoting health behavior[2].

Recognizing the importance of this model, several instruments were created based on the components and concepts of Pender's HPM, such as the scale of benefits/barriers to physical activity[3], the physical activity planning scale[4], and the physical activity self-efficacy scale[5]. Among these, the Health Promoting Lifestyle Profile (HLPL) stands out, which aims to assess health behavior and lifestyle. This scale has been translated and applied in several countries, such as Mexico[6], China[7] and Malaysia[8].

There has been an increase in studies that elucidate factors associated with a healthy lifestyle of the young population and, mainly, university students, since maintaining a healthy lifestyle contributes to better academic development[9]. Similarly, decreased sedentary behavior, better sleep quality and a nutrient-rich diet have been shown to be effective in reducing psychosomatic diseases in the university public[10–11].

However, when entering the academy, students start to deal with new routines, in addition to changing habits and lifestyles, such as living away from their parents, living with new social groups and academic pressures, which can affect student life quality[12].

A study conducted in Saudi Arabia, using HLPL, showed that university students in the health area had unhealthy lifestyles, presenting poor nutrient eating habits and little physical activity[12]. The same scale was applied to university students from different courses in Mexico and it was found that most participants were considered unhealthy or moderately healthy[13].

Despite the importance of the general analysis of university lifestyle, it is believed that analyzes stratified by courses are interesting to understand the nuances and factors that influence university lifestyle in different training scenarios. For Mexican nursing students, no study has yet been conducted that assessed the university lifestyle subsidized by Nola Pender's HPM. Moreover, this is an audience that has shown dissatisfaction with the nursing profession, mainly because they do not feel heard[14], in addition to presenting more negative statements about suicidal idealizations when compared to another course in the health area[15]. Thus, identifying factors that influence Mexican nursing students' lifestyle is pressing.

Therefore, this research aimed to determine nursing students' lifestyle at a university in Mexico, according to personal factors and previous behaviors of Nola J. Pender's HPM.

METHOD

This is a cross-sectional study guided by Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).

The study was carried out at a public university of Minatitlán, Veracruz, Mexico, in October 2019. All nursing students enrolled in the curricular internship course and over 18 years of age were included, totaling 130 participants. This audience was chosen because they were already in the last semesters of the course and thus favor an overview of how academic activities could influence lifestyle.

Data collection occurred in two moments. The first corresponded to the self-application of two instruments in a private room at the university itself: a questionnaire about personal factors (sex, age, marital status, number of children, occupation) and past behavior (hours of cell phone use, hours of television use) and the HLPL-I scale. This scale was built in English in 1987[16], based on Nola J. Pender's HPM. The Spanish version was validated in 1990[6], featuring Alpha Cronbach of 0.93. The scale has 48 items, which integrate 6 domains, including nutrition (6 items), physical activity (5 items), health responsibility (10 items), stress management (7 items), interpersonal relationships (7 items) and self-actualization/transcendence (13 items). All scale items have a Likert scale of 4 response options (1=never, 2=sometimes, 3=often and 4=routinely)[6].

The lifestyle score can be obtained dimensionally, by adding the values of the responses of the items corresponding to each domain, or the global product of the sum of the scores obtained in the 6 domains (48 items), ranging from 48 to 192 points. To facilitate understanding, scores can be transformed into a percentage scale from 0 to 100, in which the higher the score, the healthier the lifestyle. Thus, the global lifestyle is classified as unhealthy, when the global value is less than 33.3, moderately healthy, from 33.3 to 66.6, and healthy, when it is greater than 66.6 points.

In the second moment, students were sent to another room, also inside the university, to measure weight, height, waist circumference (WC) and systolic (SBP) and diastolic (DBP) blood pressure check. It is important to highlight that the entire data collection process was performed by four previously trained nurses.

To measure anthropometric measurements, we used an estadiometer, digital scale, inelastic and flexible measuring tape of clinical use. Blood pressure was checked using an Omrom® digital meter. Measurements were collected in a standardized manner, following a sequence of procedures in duplicate by two evaluators with an interval of 5 minutes. In cases of difference between the first and second measurement, the mean between the two values of each measurement was calculated, as suggested by the recommendations of a clinical practice guide for hypertension diagnosis and treatment of the Ministry of Health of Mexico[17].

Based on weight and height data, the Body Mass Index (BMI) was calculated according to the following formula: BMI=weight (kg)/height^2 (m). For nutritional status characterization, students were classified as normal weight (BMI of 18.5 to 24.9 Kg/m^2), overweight (BMI from 25 to 29.9 Kg/m^2) and obesity (BMI greater than or equal to 30 Kg/m^2)[18].

WC was classified according to the Mexican Ministry of Health recommendations: normal, when measurements in men <90 cm and in women <80 cm; and altered, when measurements are greater than the values mentioned for each sex[19]. Blood pressure, on the other hand, was classified as normotensive (<140/90 mmHg) and altered (≥140/90 mmHg), following the recommendation of the ESC/ESH Guidelines for the Management of Arterial Hypertension[20]. To assess screen time (television and cell phone), the results were classified into two categories: ≤3 hours (acceptable time) and ≥4 hours (a lot of exposure)[21].

The variables were divided into independent variables, that is, personal factors [sex, age, marital status, number of children, occupation, weight, height, BMI, WC and blood pressure] and previous behavior (hours of cell phone use, hours use of television); and dependent, referring to the six Health-Promoting Lifestyle Profile (HPLP-I) domains.

The data obtained were organized and processed in Statistical Package for Social Sciences (SPSS), version 22. Continuous variables were assessed for normality using the Komolgorov–Smirnov test. For descriptive statistics, absolute and relative frequency, mean, standard deviation, median and minimum and maximum values were used. Student's t-test and ANOVA were used to compare the means of HPLP domains with the independent variables of interest, in addition to applying Pearson's correlation test for correlations. Significance level was settled at 0.05 5%, considering a value of $p < 0.05$ as statistically significant.

The development of this study met the national and international requirements of ethics in research with human beings.

RESULTS

Table 1 shows the characterization of the 130 students regarding personal and previous behavior factors according to component 1 of Pender's HPM. It was observed that most students were female, aged between 21 and 22 years, single and without children. As for clinical variables, most participants had altered WC, but normal weight nutritional status and normal SBP and DBP. In the previous behavior, it was found that participants are frequently exposed to screens, having an average of 7 hours daily when added time of cell phone and television.

Table 1 – Characterization of students regarding individual factors and previous behavior according to Nola J. Pender's Health Promotion Model. Minatitlán, Veracruz, Mexico, 2019 (n=130).

Personal factors	F	%
Sex		
Female	111	85.4
Male	19	14.6
Age		
21 to 22 years	75	57.7
23 to 24 years	47	36.2
≥ 25 years	8	6.2
Marital status		
Without partner	113	86.9
With partner	17	13.0
Children		
Yes	10	7.7
No	120	92.3
Work		
Yes	6	4.6
No	124	95.4
WC*		
Normal	52	40.0
Altered	78	60.0
Nutritional status		
Normal weight	56	43.1
Overweight	44	33.8
Obesity	30	23.1

Table 1 – Cont.

Personal factors	F	%
SBP†		
Normal (<140 mmHg)	128	98.5
Altered (≥140 mmHg)	2	1.5
DBP ‡		
Normal (<90 mmHg)	126	96.9
Altered (≥90 mmHg)	4	3.1
Previous behavior		
Hours of mobile phone use		
≤ 3 hours	29	22.3
≥4 hours	101	77.7
Hours of television use		
≤ 3 hours	121	93.1
≥4 hours	9	6.9

*WC=waist circumference. † SBP=systolic blood pressure. ‡ DBP=diastolic blood pressure.

Regarding HPLP scores, Table 2 presents the distribution for each domain. It was identified that the overall scores ranged from 38 to 93.20 points, with an overall mean of 70.67 points. Thus, of the 130 participants, 92 (70.8%) were classified as having a healthy lifestyle and 38 (29.2%) had a moderately healthy lifestyle. The self-actualization domain presented the highest mean (82.82) and the physical activity domain, the lowest (54.07).

Table 2 – Distribution of scores related to the HPLP questionnaire domains applied to students. Minatitlán, Veracruz, Mexico, 2019 (n=130).

Domains	$\underline{X}$*	M†	Min‡	Max§	SD‖
Nutrition	67.21	66.66	33.33	100.00	14.76
Physical activity	54.07	52.50	25.00	95.00	18.00
Health responsibility	63.57	62.50	32.50	92.50	11.91
Stress management	63.07	64.28	28.57	92.86	12.32
Interpersonal relationships	79.28	78.57	46.43	100.00	11.21
Self-actualization	82.82	82.69	46.15	100.00	10.91
Lifestyle	70.67	70.55	38.00	93.20	9.09

* $\underline{X}$=Mean; †M=Median; ‡Min=Minimum; §Max=Maximum; ‖SD=standard deviation;

Table 3 shows differences in global means and domains according to personal factors and previous behaviors. There was a statistically significant difference (p=0.049) in the mean scans of the physical activity domain compared by sex. Thus, men had higher scores in this domain. It was also found that not having children favored higher means in physical activity (p=0.004) and stress control (p=0.005). Moreover, those whose SBP scores were altered presented higher means in physical activity (p<0,001), when compared to those classified as normal. In the previous behavior variables, watching television for less than three hours obtained higher mean scores in the self-actualization domain (p=0.025). No differences were observed between the overall lifestyle means and the independent variables.

Table 3 – Relationship between personal and previous behavior factors and the mean scores of the HPLP questionnaire domains. Minatitlán, Veracruz, Mexico, 2019 (n=130).

Variables	N	Nutrition	Physical activity	Health responsibility	Stress management	Interpersonal relationships	Self-actualization	LS¶
Personal factors								
Sex*								
Male	19	69.30	61.58	63.55	65.60	76.88	82.39	71.40
Female	111	66.85	52.79	63.58	62.64	79.70	82.90	70.55
T	-	0.665	1.987	-0.010	0.966	-1.012	-0.188	0.374
P	-	0.507	0.049	0.992	0.336	0.318	0.851	0.709
Age †								
21 to 22 years	75	66.66	53.86	62.70	63.52	80.19	82.53	70.31
23 to 24 years	47	68.35	54.14	64.62	62.23	77.35	82.56	70.36
≥ 25 years	8	65.62	55.62	65.31	63.83	81.69	87.01	72.39
F	-	0.235	0.035	0.486	0.172	1.153	0.626	0.143
P	-	0.791	0.966	0.616	0.842	0.319	0.536	0.867
Marital status*								
Without partner	113	66.62	54.33	63.47	63.30	79.01	82.70	70.60
With partner	17	71.07	52.35	64.11	61.55	81.09	83.59	71.15
T	-	-0.974	0.422	-0.254	0.545	-0.711	-0.312	-0.231
P	-	0.342	0.674	0.800	0.587	0.478	0.756	0.818
Children*								
Yes	10	67.91	42.50	63.50	56.07	79.28	84.03	68.53
No	120	67.15	55.04	63.58	63.66	79.28	82.72	70.85
T	-	0.157	-3.419	.021	-3.299	0.000	0.365	-0.776
P	-	0.876	0.004	.983	0.005	1	0.716	0.439

Table 3 – Cont.

Variables	N	Nutrition	Physical activity	Health responsibility	Stress management	Interpersonal relationships	Self-actualization	LS[¶]
Work*								
Yes	6	56.94	40.83	60.00	59.52	73.80	80.44	65.10
No	124	67.70	54.71	63.75	63.24	79.55	82.94	70.94
T	-	-1.759	-1.862	0.752	0.722	-1.227	0.545	-1.546
P	-	0.081	0.065	0.454	0.472	0.222	0.587	0.125
WC* [‡]								
Normal	52	68.42	56.05	63.79	63.18	76.92	80.91	70.01
Altered	78	66.39	52.75	63.42	63.00	80.86	84.09	71.11
T	-	0.767	1.024	0.172	0.083	-1.983	-1.638	-0.676
P	-	0.445	0.308	0.864	0.934	0.050	0.104	0.500
Nutritional status[†]								
Normal weight	56	66.74	53.12	63.03	62.50	78.18	81.79	69.69
Overweight	44	69.12	53.18	63.92	64.44	81.98	85.00	72.09
Obesity	30	65.27	57.16	64.08	62.14	77.38	81.53	70.44
F	-	0.654	0.570	0.102	0.416	2.000	1.344	0.868
P	-	0.522	0.567	0.903	0.660	0.140	0.265	0.422
SBP* [§]								
Normal	128	67.31	53.82	63.35	63.00	79.49	83.03	70.57
Altered	2	60.41	70.00	77.50	67.85	66.07	69.23	77.35
T	-	0.655	-10.143	-1.677	-0.551	1.691	1.791	-1.046
P	-	0.514	<0.001	0.096	0.582	0.093	0.076	0.298
DBP*[‖]								
Normal	126	67.39	54.08	63.67	63.20	79.42	82.93	70.79
Altered	4	61.45	53.75	60.62	58.92	75.00	79.32	66.95
T	-	0.791	0.037	0.502	0.683	0.775	0.650	0.831
P	-	0.431	0.971	0.617	0.496	0.440	0.517	0.407

Table 3 – Cont.

Variables	N	Nutrition	Physical activity	Health responsibility	Stress management	Interpersonal relationships	Self-actualization	LS¶
Previous behavior								
Hours of mobile phone use*								
≤ 3 hours	29	70.54	53.62	65.34	64.40	82.75	86.80	73.04
≥4 hours	101	66.25	54.20	63.06	62.69	78.28	81.68	69.99
T	-	1.385	-0.154	0.906	0.659	1.911	2.262	1.603
P	-	0.168	0.878	0.367	0.511	0.058	0.025	0.112
Hours of television use*								
≤ 3 hours	121	67.87	54.25	63.86	62.78	79.04	82.64	70.73
≥4 hours	9	58.33	51.66	59.72	67.06	82.53	85.25	69.84
T	-	1.889	0.415	1.006	-1.006	-0.901	-0.691	0.284
P	-	0.061	0.679	0.316	0.316	0.369	0.491	0.777

*Student's t. †ANOVA; ‡WC=waist circumference; §SBP=systolic blood pressure; ||DBP=diastolic blood pressure; ¶LS=lifestyle.

Table 4 shows the correlations between lifestyle variables (HLPL scale domains) and previous personal and behavior factors with variables also of personal but clinical factors. A weak correlation was identified between physical activity and emotional support with SBP (p=0.007; p=0.027, respectively). There was also a negative correlation between the variable self-actualization and cell phone hours. Despite being a weak relationship, it indicates that the higher the self-actualization scores, the lower the number of hours on the cell phone. The clinical personal factors variables, when correlated with each other, showed positive correlations. A strong correlation between WC and BMI is highlighted, so that the higher the WC, the higher the BMI. BMI and DBP were also positively correlated with behavior previous hours of television. Thus, the higher the BMI and DBP, the more hours of television.

Table 4 – Pearson's correlation of HPLP scale domains with personal factors and past behavior. Minatitlán, Veracruz, Mexico, 2019. (n=130).

		WC*	BMI†	SBP‡	DBP§	Mobile use hours	Television use hours
Lifestyles							
Nutrition	r	-0.018	-0.034	0.072	-0.019	-0.144	-0.018
	p	0.841	0.697	0.416	0.831	0.102	0.839
Physical activity	r	0.077	0.051	0.237	0.121	0.046	0.065
	p	0.382	0.562	0.007	0.171	0.601	0.465
Health responsibility	r	0.093	0.039	0.104	0.025	-0.111	-0.033
	p	0.291	0.661	0.238	0.775	0.210	0.709
Stress management	r	0.057	-0.013	0.125	0.056	-0.014	0.146
	p	0.519	0.883	0.155	0.526	0.879	0.098
Interpersonal relationships	r	0.033	-0.005	-0.194	-0.085	-0.136	0.034
	p	0.713	0.953	0.027	0.338	0.124	0.703
Self-actualization	r	0.151	0.060	-0.117	-0.041	-0.200	0.119
	p	0.086	0.497	0.184	0.639	0.022	0.178
Lifestyle	r	0.128	0.072	0.090	0.042	-0.127	0.062
	p	0.147	0.418	0.308	0.635	0.151	0.484
Personal factors							
WC	r		0.877	0.546	0.349	-0.110	0.158
	p		<0.001	<0.001	<0.001	0.212	0.073
BMI	r			0.544	0.412	-0.087	0.192
	p			<0.001	<0.001	0.324	0.029
SBP	r				0.630	-0.067	0.080
	p				<0.001	0.450	0.365
DBP	r					0.000	0.212
	p					0.998	0.015
Previous behavior							
Mobile use hours	r						0.152
	p						0.083

*WC=waist circumference; † BMI=Body Mass Index; ‡ SBP=systolic blood pressure; § DBP=diastolic blood pressure.

DISCUSSION

This study investigated the lifestyle of nursing students, personal factors and previous behaviors that are adopted during university life. Knowing personal factors is important for understanding healthy lifestyles, as they can benefit or affect, depending on how individuals are visualized, whether as barriers or benefits[22].

Participants' personal characteristics showed a profile similar to that of other studies with nursing students, with a prevalence of females aged between 21 and 25 years, being single and without children[23–24].

Most participants presented a healthy lifestyle in the overall HLPL scale scores. Nevertheless, almost 30% presented moderate classification, with low scores in some domains, especially physical activity. The effects of physical activity on humans are known, involving benefits ranging from muscle toning to improving the immune system and mood[25]. An example of this was observed in nurses in Great Britain who periodically had improvement in overall well-being, with improved mood, decreased depressive symptoms and improved sleep quality[26].

Furthermore, a study with Chinese university students showed that the practice of physical activity, in addition to being positively correlated with the improvement of participants' well-being, was correlated with better self-esteem and body image[27].

When analyzed by sex, the practice of physical activity presented better scores in men. Similarly, Indian men were also more active in physical activity than women[28]. An explanation for this is the composition of women's time, who assume different roles, being professionals, mothers, home administrators, among others[29].

This can also be visualized when analyzing whether or not the variable has children. Those participants who did not have children had higher means in the physical activity domain when compared to participants who were parents. Maternity/parenthood reduces the time available for physical activity, added to higher financial expenses, which limit access to gyms that are usually private[30].

Moreover, those who had children had lower scores in the stress management domain when compared to participants with no children. Marital conflicts, limited financial resources and sleep deprivation are factors present in the family context that potentiate stress[31].

The physical activity domain in this study was also positively correlated to SBP, but in a weak correlation (r=0.237). It is known that this relationship is usually inverse, because the practice of physical activity tends to decrease blood pressure[32]. However, it is possible that, in this study, participants were performing physical activity because they already had previously changed SBP values. Moreover, this correlation may have been influenced by the other variables that presented similar positive correlations, such as BMI, WC and DBP. These variables (BMI, WC and DBP) were also correlated with increased SBP in university students from China[33].

In Colombia, variables such as abdominal circumference and BMI were used to assess the increase in metabolic syndrome among university students.[34] In Lebanon, higher SBP and DBP values were found in students of health courses when compared to humanities courses. The values of SBP, DBP and BMI were also positively correlated[35] as well as in this research. In general, these variables also present in an altered way in patients with glycemic alterations and obesity[33].

SBP was also correlated to the interpersonal relationships domain, in a negative way, i.e., in those participants in which SBP was altered, emotional support was lower. In Vietnam, a cross-sectional study showed that the greater the support network of hypertensive people in providing informational and emotional support, the lower the likelihood of uncontrolled hypertension. The findings also revealed that social support and the characteristics of the support network were related to greater complying with health-promoting behaviors[36].

Interpersonal relationships are essential to promote self-care and favor lowering blood pressure, since people with chronic diseases are more susceptible to psychosomatic illness[37], so interventions that integrate the interpersonal component through family or friends are indispensable[38].

Another important aspect verified in this study was the relationship between the variables of previous behavior (hours of cell phone and hours of television), which were negatively correlated with the lifestyle scale self-actualization domain. With the advancement of technology, smartphones become increasingly attractive, with their games and quick access to social networks. This has generated dependence on the general public, especially in adolescents and young people[39].

Among university students in Norway, excessive screen time was negatively correlated with sleep quality[40]. Sleep undergoes many changes in the light exposure emitted by electronic devices, especially in the secretion of melatonin and cortisol, responsible for circadian regulation. Poor sleep quality is a risk factor for cardiometabolic diseases, sedentary lifestyle and psychosomatic diseases[41].

Constant exposure to the entertainment provided by screens, in addition to reducing the quality of sleep and favoring low productivity, also potentiates other health problems, such as a sedentary lifestyle and low self-esteem, which compromise quality of life[42].

The risks of excessive screen time for sedentary lifestyle were already worrisome, but were enhanced during the confinement generated by the COVID-19 pandemic. This caused a higher prevalence of overweight and obesity in the university population[43].

Therefore, although the overall lifestyle scores of most participants have been classified as healthy, they are still susceptible to risks. Their routines are accelerated and there is little physical activity. This tied to little emotional support and to long exposure to screens can trigger serious future problems.

Thus, this study contributed to an individualized analysis of a nursing course at the *Universidad Veracruzana*, which, despite having involved 130 students, is still a small sample to represent nursing students in Mexico. Therefore, similar studies with larger samples are recommended, as well as longitudinal studies that accompany students during the academic period, as well as studies and public policies that propose interventions with a view to improving the lifestyle and health-promoting behaviors of this public. Moreover, further studies of teaching methodologies with a positive focus are needed in order to reduce the pressure often generated in the university context. In addition to this, a better organization of academic schedules and routines is needed to allow free time to perform healthy and leisure activities, especially in public universities.

CONCLUSION

In this study, students presented healthy or moderately healthy lifestyles. However, when assessed individually and by the hlpl scale domains, it was found that the physical activity domain obtained the lowest score. Moreover, when relating the scale domains with personal factor variables, it was identified that many students have SBP and DBP, as well as altered BMI and WC. Another important relationship was between the variables of previous behavior (hours of cell phone and television use) that were related to lower means of self-actualization and higher values of SBP, DBP, BMI and WC. Thus, these findings contribute to instigate more interventions and health policies that encourage health-promoting behaviors in the university public. In addition, more teaching strategies with a positive focus should be encouraged to reduce university stress.

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NOTES

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APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Research Ethics Committee of the *Universidad de Veracruzana*, Opinion CIEE ECS 220.

CONFLICT OF INTEREST

There is no conflict of interest.

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