

Comparison of Health Promoting Lifestyle in Guilan Medical and Non-Medical Sciences Students

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Background: Since health-promoting lifestyle is an important determinant of health status, this study aimed to compare the health-promoting lifestyle in medical and non-medical students of Guilan, Iran.

Methods: This is a cross-sectional study with a descriptive-analytical approach that was performed on 1319 students of medical sciences and non-medical sciences in Guilan, 2014. The data collection tool was 52-item HPLP II in six dimensions (health responsibility, physical activity, nutritional habits, stress management, spiritual growth, and interpersonal relationships). Data was analyzed using one-way ANOVA, T-test, and Kruskal–Wallis test.

Results: The mean health-promoting lifestyle among students of Guilan University and Guilan University of Medical Sciences was (129.5 ± 7.17) and (128.1 ± 19), respectively. There was a significant difference between the two studied population in terms of health responsibility ($p = 0.0001$). Students of medical sciences had 3.2 times more favorable health promoting lifestyle (OR = 3.123, 95% CI = 1.57-6.3), married students 6.1 times (OR = 1.55, 95% CI = 1.05-2.32), students with mothers with under diploma degree 2.6 times (OR = 2.6 95% CI = 1.49-4.62), students with fathers with diploma 1.7 times (OR = 1.7, 95% CI = 1.2-2.56), and physical education and sports science students 5.8 times (OR = 8.5, 95% CI = 3.42- 20.95) had a more optimal health promoting lifestyle.

Conclusion: In the present study, students' health-promoting lifestyles are in an unfavorable condition. Since the students in the future will be responsible for managing different sectors of the country and will play a role in changing the other health-promoting behavior of other strata of the society, it is important to consider their health-promoting lifestyles by providing facilities and eliminating the shortcomings.

Keywords: lifestyle, health-promoting, students

Introduction

The lifestyle is referred to the normal daily routine of every person affecting the individual's health (1). The individual choosing a lifestyle to promote own health and preventing diseases takes appropriate measures such as proper diet, sleep and activity, exercise, weight control, non-smoking and non-drinking alcohol and immunization against diseases (2, 3). The health-promoting lifestyle is an important determinant of the health status (4).

The health-promotion is a knowledge and art of changing the lifestyle and includes the behaviors in which a person considers the proper nutrition, regular exercise, avoidance of malicious behaviors and drugs, protection against accidents, timely diagnosis of the diseases. In addition, emotion and thought control and coping with stress and problems in the mental and spiritual aspect, independence and adaptation, and correction of interpersonal relationships in the social aspect (5, 6). The six important components of these measures are responsibility (7) physical activity (8), healthy nutrition (9), stress (10), physical and mental illness (11), spiritual growth (12). Interpersonal relationships are the main dimensions of the World Health Organization's life skills program (13). The causes of many chronic diseases are the lifestyle and human behaviors; moreover, health-promoting behaviors are the most important ways that through which people can preserve their health (14).

Adolescents and young people are considered as at-risk populations; moreover, the high-risk behaviors with the formation of habits often begin at this age and are continued. Many young people are exposed to a wide range of unhealthy habits including inappropriate nutrition, inactivity, and high-risk behaviors, such as smoking that leads to adverse health outcomes (16). University students are in a dynamic transitional period of growth and development, which is the bridge between adolescence and youth (17). This period is a good time to develop healthy lifestyle behaviors (18) and it is along with very rapid changes in the body, mental and social relationships (16). The desire for risk behaviors such as smoking, inactivity, irregular meals, and lack of health responsibility is more common in the university student population (17). In this period of physical, psychological and sexual development, young people gradually take their own health related responsibilities. Therefore, many risky behaviors of adults can be prevented in the early stages. (16).

Non-medical students do not have health-related courses in their curriculum and usually receive

these issues through personal studies and media; hence, they may not know much about health issues and the right lifestyle. Research indicated that despite the availability of adequate scientific and theoretical foundations for medical science students, these fields were not effective in practice (19).

Various studies showed the differences between the health-promoting lifestyle in medical and non-medical science students. Shaba et al. showed that the health-promoting behaviors of both groups were at the same level. They found no significant difference between the two groups (15), while in the study of Kan et al., it was shown that the nursing students had better health-promoting lifestyle than non-nursing students (18). Mansourian in his study showed that the lifestyle of medical science students was better than that of non-medical students. In total, more than half of the students had poor and fair lifestyle (20). Farmanbar in a study on nursing students at Guilan University of Medical Sciences showed that the students were in an unfavorable position in terms of eating habits, activity, and exercise and stress management (21).

Since the age and social status of students as an educated community of the society can be made as the sample for others, choosing any kinds of lifestyle by them influences not only their personal lives but also affects the behavior and lifestyle of other strata as well. This community of people as the connectives can promote health promoting issues for family and consequently for the community.

Having a healthy lifestyle in students can have an important role in the individual health. Therefore, considering the high cost of health care and the need to change the treatment approach to prevention approach, as a community health nurse, the researcher attempted to compare health-promoting lifestyle in medical and non-medical science students in the Guilan province.

methods

The present study was a cross-sectional study with a descriptive-analytical approach that was conducted on non-medical and medical sciences' students in Guilan, Iran, in 2014. The research population consisted all the students studying in two universities of medical sciences and non-medical science in Guilan. The inclusion criteria of the study included studies in the second and third year of education (bachelor and general medicine), under the age of 35, the absence of chronic and incurable diseases and disability, non-studying in post-graduation course, moreover, the exclusion criteria were non-completing at least 20% of the questionnaire.

The sample size was determined as the maximum number of 100 people in the nursing group to define the health-promoting lifestyle of nursing students based on the Health Promoting Life Style (HPLP II). In addition, we considered the study of Kun (18) with a confidence interval of 95%, an estimation error limit of 10% and standard deviation of 0.34 (with a drop of 50%). Since the target population of the study includes all the students (16,206 people) studying at the medical and non-medical sciences universities and considering the presence of 14 colleges in these universities, the final sample size was calculated as 1400 people.

At first, a list of all colleges was prepared, and then the number of samples from each faculty was calculated according to the total number of students of the same faculty using the following formula.

$$\text{The sample size of each faculty} = \frac{\text{Total number of students}}{16206} \times 100$$

Finally, 334 people from Guilan University of Medical Sciences and 985 people from Guilan University were selected.

Calculating the sample size in each faculty

To reach the desired volume in each faculty, first, the lists of the students were taken from the Department of Education and then the number of classes per day was randomly selected as K classes. After explaining the objectives of the study, the students were asked to complete the questionnaire if they like. The k was 11 in the study. The data-gathering tool was a two-part profile 2 questionnaires of health-promoting lifestyle. The first part of which was related to personal and social information and the second part was related to the behaviors of the health-promoting lifestyle, including six domains (health responsibilities, physical activity, nutritional habits, stress management, interpersonal relationships, and spiritual growth). The validity and reliability of the profile 2 tools of the health-promoting lifestyle were carried out by Hosseini (22). In this study, the Cronbach's alpha coefficient for the whole tool was 95% and the internal correlation coefficient of the subscales was found within 87-67%.

The answers of life style items of the questionnaire were based on the 4-point Likert scale (never, sometimes, often, and always), which was scored as 1 (never), 2 (sometimes), 3 (often) and 4 (always). The scores range within 25-208. According to the mean score, the score over 130 was categorized as a desirable lifestyle and the low mean score was considered as the unfavorable lifestyle.

After completing and the collecting questionnaires, the data was analyzed using SPSS software V.16 and descriptive and inferential statistics. Health-promoting lifestyle (dependent variable) and individual-social factors (independent variables) were investigated. The significance level was considered as 0.05 in all tests. In order to compare the health-promoting lifestyle in Guilan Medical and non-medical students, a multidimensional logistic regression model was used with social and personal characteristics control. The response variable in this study was an under-mean health-promoting lifestyle score (≤ 130) and an over-mean health-promoting lifestyle score (> 130). To investigate the factors affecting the health-promoting lifestyle in the logistic regression model, Backward LR method with entry= 0.05 and removal= 0.1 was used. The trend was such that all the variables in the single-variable analysis were statistically correlated with Kruskal Wallis, independent t-test, and ANOVA, and Pearson correlation coefficient with HPLP variable was statistically significant with $P < 0.01$

Table 1: Frequency distribution of the studied units in the considered colleges

Abundance	Number	Percentage
University (faculty)		
medical	122	9.2
Dental	23	1.7
Health	37	2.8
Nursing and Midwifery of Rasht	66	5
Nursing and Midwifery of Langerood	23	1.7
Paramedicine of Langroud	63	4.8
Total	334	25.3
Literature and Humanities	290	22
Science	153	11.6
Natural resources	51	3.9
Agricultural Science	89	6.7
Physical Education and Sports Science	49	3.7
Engineering	254	19.3
Architecture and art	53	4
Mathematical Sciences	46	3.5
Total	985	74.7
Sum Total	1319	100

Results

The mean age of participants was 21.75 ± 1.61 . About 57.5% were female, 91.6% were single, 50.7% lived with their families, 40.6% of their fathers were self-employed and 80.4% of their mothers were homemaker, 46.2% of the students had a monthly income of more than 10 million Rials. The results of the study in terms of the universities showed that the mean age was 1.41 ± 22.07 in the University of Medical Sciences and 21.64 ± 1.66 in Guilan University. Moreover, 68% of students at the University of Medical Sciences were female, 91.3% were single, 51.8% lived with their families, 41.9% of their fathers were self-employed and 79% of their mothers were

homemaker. The monthly family income of 45.5% of students was above 10 million Rials. In addition, in the University of Guilan, 53.9% of the students were female, 91.7% were single, 40.2% of their fathers were self-employed and 80.8% of their mothers were homemaker.

The results showed that there is a significant relationship between the total score of the health-promoting lifestyle and the personal and social characteristics of medical students. Moreover, in the University of Guilan, there is a significant relationship between the total score of the health-promoting lifestyle and the personal and social characteristics, except for the residence and the academic year (Table 2).

Table 2: Relationship between the health-promoting lifestyle and personal and social characteristics in the studied population

Social-personal characteristics		Guilan University of Medical Sciences			Guilan University		
		health promoting lifestyle		Significance level	health promoting lifestyle		Significance level
		Average	Standard deviation		Average	Standard deviation	
Gender	female	129.37	17.02	**P< 0.897	47.129	19.07	P< 0.012
	male	129.64	19.10		43.126	18.83	
Education year	third	128.85	17.51	**P< 0.45	56.127	18.52	P< 0.198
	forth	130.34	17.96		26.129	20.08	
marital	single	129.74	17.75	**P< 0.334	66.127	18.85	P< 0.026
	married	126.48	16.96		55.135	20.26	
Father's education	illiterate	132.50	28.61	*P<0.161	59.121	14.25	P< 0.002
	Under the diploma	125.28	16.94	*P<0.142	45.125	18.2	
	Diploma	130.83	18.47	*P<0.201	47.128	18.53	
	Academic	130.07	15.89	**P<0.790	55.130	20.53	
Mother's education	illiterate	123.30	20.02	*P<0.8466	121.45	15.10	P< 0.002
	Under the diploma	127.88	17.36	**P< 0.897	129.04	19.38	
	Diploma	131.35	17.62	**P< 0.45	128.05	18.64	
	Academic	128.89	17.01	**0.334P<	130.45	20.71	
Location	family	131.13	17.89	*P<0.161	1299.44	19.48	P< 0.102
	Dormitory	127.63	17.62	*P<0.142	129.29	12.87	
	Single house	128.22	12.18	*P<0.2011	126.91	18.30	
Mother's job	housewife	128.89	17.01	**P<0.790	127.94	17.03	P< 0.003
	non-housewife	129.57	17.85		127.87	17.88	
Father's job	Employee	128.88		**P< 0.897			P< 0.001
	Self-employed	127.84					
	Others	129.67					

* One-way analysis of variance

** t-test

*** Kruskal Wallis Test

Table 3: Comparison of mean and standard deviation of students' health-promoting lifestyle behaviors based on the of education college

		Health Promoting Lifestyle Behavior Score		One-way ANOVA test
		Average	Standard deviation	
Faculty	medical	131.85	16.93	df=13 F=2.682 P<0.001
	Dental	131.43	22.94	
	Health	123.43	18.46	
	Nursing and Midwifery of Rasht	128.50	17.82	
	Nursing and Midwifery of Langerood	125.13	16.99	
	Paramedicine of Langroud	130.24	16.07	
	Literature and Humanities	128.01	20.05	
	Science	130.33	17.95	
	Natural resources	129.41	17.78	
	Agricultural Science	127.22	18.26	
	Physical Education and Sports Science	135.78	19.56	
	Engineering	125.87	18.93	
	Architecture and art	121.04	15.69	
	Mathematical Sciences	133.04	18.01	
University	Medical science	129.46	17.69	df =1 F=1.388 P<0.239
	Guilan	128.07	19.01	

The findings showed that there is a significant difference between the health-promoting lifestyle and the education place ($P < 0.001$) (Table 3).

Table 4: Comparison of mean and standard deviation scores of students' lifestyles areas by faculties

Faculty	Number	Physical * activity	**responsibility	Nutrition ** habits	Spiritual growth * field	Interpersonal relations ** area	Stress management * area
		Mean± Sd	Mean ± Sd	Mean± Sd	Mean ± Sd	Mean ± Sd	Mean ± Sd
medical	122	16.78±4.46	22.81±4.14	21.68±4.03	26.28±4.40	25.47±3.76	18.80±3.29
Dental	23	18.69±5.26	21.43±4.90	21.39±5.13	26.30±4.92	25.04±4.79	18.56±4.14
Health	37	16.29±4.67	21.21±4.60	21±5.13	24.05±4.66	23.67±4.08	17.18±3.09
Nursing and Midwifery of Rasht	66	17.13±5.40	22.46±3.92	21.72±4.22	24.78±4.18	23.98±3.57	18.39±3.39
Nursing and Midwifery of Langerood	23	17±5.08	21.78±4.43	20.52±3.91	23.91±3.88	24.30±4.75	17.60±3.15
Paramedicine of Langroud	63	16.38±4.53	21.87±3.54	20.69±3.59	26.74±4.43	26.17±3.60	18.36±3.14
Literature and Humanities	290	16.93±5.08	21.31±4.51	21.10±4.01	25.17±5.14	25±4.50	18.48±3.62
Science	153	16.66±4.69	21.05±4.45	21.46±4.35	26.60±4.70	25.86±3.77	18.67±3.43
Natural resources	51	17.96±5.02	21.78±3.76	21.35±3.55	25±5.05	24.84±4.55	18.47±2.96
Agricultural Science	89	17.20±5.40	28.87±4.66	20.60±4.02	25.03±4.68	25.10±4.10	18.40±3.41
Physical Education and Sports Science	49	25.38±3.04	21.02±3.50	18.69±4.73	25.85±6.07	24.14±4.52	20.67±2.45
Engineering	254	16.94(4.43)	20.11(4.80)	18.69(4.73)	25.07(5.31)	25.03(4.34)	18.57(2.90)
Architecture and art	53	15.39(4.27)	20.01	20.11(4.13)	24.52(4.83)	24.56(3.80)	16.41(2.97)
Mathematical Sciences	46	17.82(5.28)	22.43(4.44)	22.23(4.10)	26.45(4.40)	25.60(4.61)	18.47(3.69)
Total		17.23(5.04)	21.24(4.47)	20.89(4.16)	25.47(4.94)	25.08(4.21)	18.48(3.34)
One-way ANOVA test		df=13 F=12.548 P<0.000	df=13 F=3.722 P<0.000	df=13 F=3.251 P<0.000	df=13 F=2.377 P<0.004	df=13 F=1.884 P<0.028	df=13 F=3.991 P<0.000

** A score of higher than 5.22 was considered as a desirable behavior and a score of less than 5.22 was considered as the unfavorable behavior.

The results showed that the mean scores of the students of Guilan University of Medical Sciences were higher in the faculties of dentistry, medicine,

nursing, and midwifery, respectively, and at Guilan University, in faculties of physical education, agricultural sciences, mathematics and physical education and sports science were respectively higher (Table 43).

Table 5: Comparison of health promotion lifestyle by areas in Guilan University of Medical Sciences and Guilan University

University Dimensions of Health promotion lifestyle Behaviors	Guilan University of Medical Sciences		University of Guilan		Mann Whitney Test
	Mean± Sd	rating average	Mean± Sd	rating average	
Physical activity	16.87±14.80	639.26	17.35±5.13	667.03	0.249
Health responsibility	22.23±4.23	751.75	20.91±4.53	628.89	0.000
Stress management	18.36±3.34	648.29	18.53±3.35	663.97	0.514
Nutritional habits	21.33 ± 4.11	694.95	20.75±4.17	648.15	0.052
Interpersonal relationships	25±3.96	646.5	25.11±4.3	664.58	0.452
Spiritual growth	25.67 ± 4.48	669.92	25.41±5.10	656.64	0.581

Comparing the health-promoting lifestyle by different areas in Guilan University of Medical Sciences and Guilan University, the results showed that except for the area of health responsibility, there was no significant difference between the two communities (Table 5).

The results showed that by controlling the underlying and interventional variables (gender, academic year, marital status, residence, etc.) in the final model, the main variables of the university (p= 0.001), marital status (p= 0.031), mother’s education (p= 0.012), father’s education (p= 0.02), faculty (p= 0.001) were as the factors associated with health-promoting lifestyle. In a way that the students of medical sciences in comparison with non-medical students were 2.3 times more likely to have better health-promoting life styles (OR= 3.123, 95% CI = 1.57-6.3). Moreover, the martial will have 6.1 times higher health-promoting lifestyle score (OR= 1.55, 95%, CI= 1.05-2.32).

The students whose mothers had academic education were reported to have more than 3.2 times the chance of high health-promoting lifestyle (OR= 2.3, 95% CI= 1.2-4.5) compared to the reference group. Students with mothers with diploma degree had 4.2 times more chance of a high health-promoting lifestyle than those with illiterate mothers (referrals) (OR= 2.38, 95% ,CI= 1.3-4.3). Even the students with mothers with high school

education had a better health-promoting lifestyle than those with illiterate mothers. (OR= 2.6, 95% CI= 1.49-4.62). Students' health-promoting lifestyle studies in relation to their father's level of education showed that students with fathers with academic education and diploma students had higher scores of health-promoting lifestyle than those with fathers with under diploma education level (reference group) (OR= 1.7, 95% CI= 1.2-2.56 and OR= 1.64, 95% CI= 1.16-2.33). It should be noted that the health-promoting lifestyle chances of students with illiterate fathers were not significant compared to the reference group (under the diploma).

In evaluating the effect of the college as a predictor of the health-promoting lifestyle in students, the findings indicated that the students of the faculty of mathematical sciences compared to the faculty of architecture and art (reference group) had 3.6 times more favorable health-promoting lifestyle (OR= 3.6, 95%, CI= 1.5-8.6). Students of engineering faculty compared to the Architecture and Art faculty (reference group), had 9.1 times more favorable health-promoting lifestyle (OR= 1.93, 95% CI= 0.96-3.39). Students of the faculty of physical education and sports sciences had 5.8 times a better health-promoting lifestyle than the faculty of architecture and arts (OR= 8.5, 95%, CI= 3.42-20.95). Faculty of Agricultural Sciences students compared to the faculty of architecture and art (reference group) had 5.2

times better health-promoting lifestyle (OR= 2.5, 95%, CI= 1.15-5.42).

Faculty of natural resources students had 3.5 times more preferable health-promoting lifestyle (OR= 3.5, 95% CI= 1.45-8.18) compared to the faculty of architecture and arts (reference group). Students of the faculty of basic sciences, compared to the faculty of architecture and arts (reference group), had a 3.4-time better health-promoting lifestyle (OR = 3.4, 95% CI = 1.64-6.98). Students of the faculty of literature and the humanities compared to the faculty of architecture and arts (reference Group) had 2.9 times more preferable health-promoting lifestyle (OR= 2.9, 95% CI= 1.50-5.96). However, the faculties of the scores of the University of Medical Sciences were not significant compared to the faculty of architecture and arts.

In fact, students of the faculties of humanities (P= 0.002), basic sciences (P= 0.001), natural resources (P= 0.005), agricultural sciences (P= 0.021), physical education (P= 0.001) and mathematical sciences (P = 0.004) had a higher health-promoting lifestyles than other groups.

In the overall comparison of health-promoting life style in the two studied societies, the mean and standard deviation of HPLP II in students of medical science were as 17.7 ± 5.129 and in 19 ± 1.128 in Guilan University. The mean score of these two societies was not statistically significant (P= 0.239).

Discussion

The results of this study indicated that the score of health-promoting lifestyle in Guilan University of Medical Sciences with an average and standard deviation of 69.17 ± 46.129 is higher than that of the University of Guilan but at an unsatisfactory level. In consistent with the present study, the results of a study showed that health-related students have a better life style compared to the other disciplines. In this regard, Mansourian et al. indicated that the lifestyle of students of the medical sciences was better than that of non-medical students, and totally, 1.53% of students had poor and fair lifestyles (20).

Among the health-promoting lifestyle areas, interpersonal relationships, and spiritual growth and responsibility of students were in desirable status, and there was no significant difference in the health-promoting lifestyle levels in both universities. Contrary to the

present study, studies have shown that students have an inappropriate sense of responsibility (16) (23). Perhaps this difference is related to the trend of the discipline and the academic term of the studied samples.

The responsibility sense of the community for their health can play an important role in promoting community health. It is believed that health accountability is an acceptable approach to health promotion in such a way that community members share the responsibility for choosing healthy lifestyles (24).

Babanejad et al. also showed that the lifestyle level of students in Ilam University of Medical Sciences was in fair level (25). Wang also reported a low level of health-promoting lifestyle in medical and non-medical students (26). Hosseini et al., and Rezaei Adriani et al. mentioned the students' health-promoting lifestyle as undesirable (6, 27). However, the study of Senjam and Singh showed that students had good health-promoting behaviors (28). The study of Shaban et al. also showed that the score in health-promoting behaviors was in the same level in both medical and non-medical students (15). Motlagh et al., considered the health-promoting lifestyle level of Yazd University of Medical Sciences students as optimal (29), which contradicted the findings of this study. Undoubtedly, the medical science students are expected to manifest their knowledge and skills on their behavior and performance based on the information (as healthcare staff) that they receive during a student life.

In the studied faculties, promoting lifestyle behaviors of the faculty of physical education had the highest average score (desirable) and the faculty of architecture and art had the lowest score (undesirable). Along with this study, Ii et al. reported similar results in physical education students in Turkey (30). Studies show that the health-promoting lifestyle of dental students and students in the medical fields was fair (31) (25). However, the present study and the study of Farmanbar indicated that the nursing students' health behaviors were undesirable (21). On the other hand, the study of Sharivar and Scott-Stills showed that nursing students had a higher score in health behaviors compared to the non-nursing students (32). This difference can be due to differences in dietary and nutritional habits, and even the samples number.

In the present study, there was a favorable health-promoting lifestyle in students considering the mother (homemaker), father (employee), university degree (parent), and living with a family. While Motlagh et al. showed that the students with employed mothers had better health-promoting behaviors (29). Possibly, homemakers receiving health issues through personal studies and mass media may have enough time to engage in and pursue their children-related matters well. The results of this study on the relationship between lifestyle and parent education level are similar to those of Rahnavard et al., in which a significant relationship was found between the level of parenting education and lifestyle of students (16).

Wei states that students living with the family had significantly higher scores in nutritional habits (23). Moreover, in the study of Ay et al., students living with the family had a better lifestyle (30). However, Kahn et al. did not find any difference between the lifestyle of nursing students and their residence (33). The family has a direct impact on the physical and mental health of the members as a social and psychological, and economic supportive network, and is a vital supporter for adapting to the problems of the students' lives (33).

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The limitations of this study can be attributed to uncertainty in the data; moreover, the physical and mental status of the studied units when completing the questionnaire probably affect the answers of the respondents, which was outside the authority of the researcher.

Conclusion

With the promising therapeutic prevention approach, health education planners must design health education programs in order to empower young people to choose healthy lifestyle and self-care activities, according to their characteristics and desires. Moreover, since lifestyle of parents inevitably affects the lifestyle of children and young people; therefore, the health education of parents and young people as the future parents is emphasized.

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