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Study and comparison of lifestyle among first and last year medical students of Isfahan university of medical sciences in 2019-2020

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Abstract

Introduction: Scientific studies confirm that unhealthy habits play an important role in the development of various disorders in all age groups. The field of medicine is a challenging period for students of this field that causes unwanted changes in their health habits and lifestyle.
Objectives: The aim of this study is the evaluate and compare the lifestyle among first and last year medical students of Isfahan university of medical sciences.
Patients and Methods: This study is a descriptive-analytic study that was conducted in two groups of first year and last year medical students in Isfahan university in academic year 2019-2020. The learning styles questionnaire (LSQ) is used in this study. It consists of 70 questions and measures lifestyle in 10 domains. This questionnaire is based on 6-point Likert scale and each question receives at least one point and maximum 6 points. Results were obtained by SPSS software version 22 and independent t-test and chi-square test.
Results: The age range of first year students was 18-24 years with a mean of 19.5 years and the age range of last year students was between 24 and 27 years with a mean of 25 years, which showed a significant difference ($P<0.05$; independent t test). There was no significant difference between the two groups in gender distribution and living status however, there was a significant difference between the two groups in marital status distribution. The mean scores of lifestyle scores in physical health dimensions and sport and physical activity in first year students were significantly higher than last year students since, the mean score of other aspects of life style was not significantly different between Junior and senior students.
Conclusion: Overall, the mean scores of lifestyle scores in physical health dimensions and sport and physical activity in first year students were significantly higher than last year students however, the mean score of other aspects of life style was not significantly different between freshmen and senior students.

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Introduction

One of the principle ways of health assessment in different societies is the study of health-promoting lifestyle. Several health problems such as cardiovascular diseases, obesity and cancers are nowadays observed in some developing countries, can be linked to the lifestyle changes of those (1). The World Health Organization (WHO) has impart that more than 60% of people's health and quality of life depends on their lifestyle. Eating habits, stress control, physical activity, and smoking are the most important aspects of a person's lifestyle (2). Choosing a lifestyle diet is important in both primary and secondary prevention of chronic disease (3). Worldwide studies have shown that people aged between 24 and 15 years old are more exposed to high-risk behaviors such as smoking, drinking, unhealthy sexual behaviors, inappropriate eating habits, and so on. Students are a relatively homogeneous and accessible population of the community, which is relatively healthy, this point is effective in reducing the incidence of disease (4).

University is a period of responsibility in terms of lifestyle choices and lifestyles behavior (5). Study of health factors and enjoying a healthy lifestyle, especially among students has a great role to promoting health (4). A recent study has shown that the average weight gain of freshman students is 1.3-3.1

Key point

The aim of this study is evaluate and compare the lifestyle among first and last year medical students of Isfahan university of medical sciences. The mean scores of lifestyle scores in physical health dimensions and sport and physical activity in first year of students were significantly higher than last year students; however, the mean score of other aspects of life style was not significantly different between junior and senior students.

kg in the first year of college (6). Nola and colleagues concluded that eating habits and overall lifestyle of medical students were not favorable (2). The prevalence of psychosocial disorders including anxiety and depression was significant among medical students (7). The results of several studies showed that the integration of nutrition and physical activity topics to medical students' curriculum has positive effect on their knowledge and health-related behaviors (8).

Objectives

The aim of this study was to evaluate and compare the lifestyle among first and last year medical students of Isfahan university of medical sciences. By comparing the lifestyles of new medical students and last years, it is clear how much the senior year students have been practicing and how their lifestyles have changed after undergoing specialized courses.

Patients and Methods

Study design

This study is a descriptive-analytical study that was performed on two groups of freshmen and senior medical students of Isfahan university of medical sciences in the academic year of 2018-2019.

The study population consisted of senior students (October 2012) with a population of 125 and first year (October 2018) students with a population of 130 participants. Using Morgan table, sample size was 100 in each group.

The sampling was conducted in the first year of classrooms and for the last year in the relevant hospitals.

The research ethics were followed in the form of questioning and data gathering. The study population was visited in person and after obtaining their consent to participate in the study and expressing the purpose of conducting the research and ensuring the confidentiality of the information, questionnaires were delivered and were given enough time to answer the questions.

Inclusion criteria included informed consent to participate in the study and attend the first or last year of medicine in the academic year 2018-2019. Questionnaires with more than 20% not completed were excluded.

The data collection tool was the learning styles questionnaire (LSQ) (9). The questionnaire consisted of 70 questions and measured lifestyle in 10 domains. The domains included; physical health domain 8 questions, exercise and health domain 7 questions, weight control and nutrition domain 7 questions, disease prevention includes 7 questions, mental health 7 questions, spiritual health 6 questions, social health 7 questions, drug avoidance 6 questions, accident prevention 8 questions and environmental health 7 questions. The values assigned to each question vary between 1 and 6. The method of grading this questionnaire was based on the 6-point Likert scale and each question received at least one point and a maximum of 6 points. The maximum score was 560 and the minimum score was 70. In order to properly interpret the domains, the total score and the scores of all domains were changed to 0-100 by changing the appropriate variable.

This questionnaire was administered to eligible individuals and was self-reported. At the beginning of the questionnaire, questions about students' demographic information including age, marital status, residence (dormitory, family life and independent home), education level of parents and body mass index (BMI) are also included. For the BMI classification the WHO classification was used, where BMI <18.5 kg/m^2 as thin, 18.5-24.9 kg/m^2 as normal, 25-29.9 kg/m^2 as overweight, and 30-34.9 kg/m^2 was considered as level one obesity (10).

In the study of Lali et al, using construct validity factor analysis, the construct validated the lifestyle questionnaire as a multidimensional tool for assessing and measuring the lifestyle, was calculated 0.87 (Cronbach's alpha) (9).

Data analysis

SPSS software version 22 was conducted for data analysis. Kolmogorov-Smirnov test was employed to check the normality of the data. In this study, descriptive statistics including mean and standard deviation were used and analytical statistics including independent *t* test and chi-square were applied. The significance level in the present study is considered to be less than 0.05.

Results

The purpose of this study is evaluate and compare the lifestyle of first and last year medical students in Isfahan university of medical sciences. The mean age of first year students was 18.5 to 24.5 years and the mean age of freshmen was 24.3 to 25.3 years with a significant difference.

There was no significant difference between gender and residence status in the two groups, however marital status was significantly different between the two groups (Table 1). Parent education level and BMI status were not significantly different between the two groups (Table 2). In addition, three freshman (3%) and two senior (2%) were smoker, and the frequency of smoking was not significantly different between the two groups.

The mean scores of lifestyle scores in physical health dimensions and sport and physical activity in freshman students were significantly higher than senior students; however, there was no significant difference between freshman and senior students in total life style scores and other dimensions (Table 3). In addition, 98% of freshmen and 99% of senior students had a moderate to good life style score (50) and there was no significant difference between the two groups.

Analysis of covariance analysis by adjusting for age and marital status in freshman and senior students showed that the mean scores of life style in physical health (P =

Table 1. Frequency distribution of gender, marital status and living conditions in two groups

Variable		First year		Last year		*P* value*
		No.	%	No.	%	
Gender	Male	27	27	21	21	0.32
	Female	73	73	79	79	
Living conditions	With family	42	42	46	46	0.15
	Single home	7	7	14	14	
	Dorm	51	51	40	40	
Marital status	Single	97	97	71	71	<0.001**
	Married	3	3	29	29	

*Chi-square test was conducted to compare the frequency of nominal indices in freshmen and senior students. ** Significance at 0.05 level.

Table 2. Frequency distribution of parents' education level and BMI status in two groups

Variable		First year		Last year		*P* value*
		No.	Percent	No.	Percent	
Father's level of education	Illiterate	1	1	1	1	0.11
	High school	8	8	2	2	
	Diploma	19	19	31	31	
	Bachelor	41	41	49	49	
	Master's degree	17	17	10	10	
	Ph.D	14	14	7	7	
Mother's level of education	Illiterate	1	1	2	2	0.07
	High school	15	15	17	17	
	Diploma	36	36	44	44	
	Bachelor	28	28	27	27	
	Master's degree	10	10	7	7	
	Ph.D	10	10	3	3	
BMI	Thin	3	3	6	6	0.23
	Normal	92	92	80	80	
	Overweight	5	5	14	14	

* Chi-square test was used to compare the frequency of nominal indices in freshmen and senior students.

0.03) as well as exercise and physical activity (P = 0.01) in first year students was significantly higher than the senior students, but there was no significant difference between the mean score of the whole life style and its other dimensions between the first and last year students.

Independent t test showed that the mean score of life style in exercise and physical activity in single students was significantly higher than married students (P = 0.007), since the mean score of total life style and its other dimensions between single and married students was not significantly different (P> 0.05) (Table 4).

Discussion

The results of the study showed that lifestyle scores in both groups were in good condition and most people scored above the average.

The study did not show a significant difference in the mean score of life style of freshmen and senior year medical students. There was also no significant relationship between lifestyle and academic year of students. However, in the physical health and physical activity variables, first year students have significantly higher mean scores than senior year students. Singh et al, in their study on adolescents in India, did not find a significant relationship between student life style and age (11) which is in consistent with our study.

Demographic information, except marital status, was not significantly different between the two groups. The mean score of lifestyle in exercise and physical activity in single students was higher than married students. Probably the reason for a better lifestyle score in single students is more opportunity for physical activity or more attention due to less busy lifestyle.

The two groups had moderate physical activity and the first year mean score was higher than the last year average and the difference between the two groups was statistically significant. Abdullah et al mentioned 69% as the rate of having regular physical activity among the students in Hong Kong study (12), which is different from our results.

These results indicated that exercise is not planned in the daily life of students, which may be due to lack of opportunity and involvement in night shifts and also daily fatigue or struggles to pass the residency exam among senior students. Recommendations such as stretching and recommending a quick walk to the workplace and reinforcing a culture of physical activity in the workplace,

Table 3. Mean scores for lifestyles by year students

Score	First year		Last year		*P* value*
	Mean	SD	Mean	SD	
Physical health	70.1	13.9	63.03	11.3	<0.001**
Exercise and physical activity	58	19.1	48.2	19.1	<0.001**
Healthy diet	63.3	16.1	59.9	18.5	0.16
Prevention of diseases	80.2	12.4	81.8	10.7	0.33
Psychological health	74.7	16.3	76.1	23.2	0.62
Spiritual health	83.8	26.8	78.9	17.4	0.13
Social health	78.6	15.1	79.9	13.1	0.50
Using drug	93.7	11.9	93.6	9.1	0.95
Accident prevention	76.8	17.6	79.1	12.3	0.28
Environmental health	75.1	15.2	77.1	14.5	0.35
Life style	75.4	10.9	74.03	9.3	0.33

* Independent *t* test was conducted to compare the mean of variables in freshman and senior students. ** Significance at 0.05 level.

Table 4. Average total life style score and its dimensions (out of 100) by student marital status

Score	Single		Married		*P* value*
	Mean	SD	Mean	SD	
Physical health	66.8	13.6	65.1	10.2	0.49
Exercise and physical activity	54.5	20.2	45.7	15.2	0.007
Healthy diet	61.5	17.8	60.7	15.2	0.96
Prevention of diseases	80.9	11.9	81.1	9.7	0.97
Psychological health	75.7	20.6	73.7	16.8	0.59
Spiritual health	81.6	23.5	80	17.9	0.71
Social health	79.1	14.8	79.9	9.7	0.70
Using drug	93.5	11.9	93.6	9.1	0.52
Accident prevention	78.2	15.4	76.5	13.7	0.55
Environmental health	75.8	14.3	77.4	17.7	0.58
Life style	74.9	10.6	73.9	7.7	0.55

* Independent *t* test was conducted to compare the mean of variables in single and married students.

especially for women, can help the group at least.

The difference between the mean score of physical health in the freshman year compared to the last year seems to be reasonable considering the questions in this field especially in the field of sleep. The senior year students do not have good sleep due to night shift and increased work responsibilities and stress (13). In the study by Ghoreishi and Aghajani et al, a clear relationship between academic year and sleep quality among Zanjan medical students was detected which is in consistent with our results (14).

In this study, healthy eating was at a moderate level and was not significantly different between two groups. The young people's interest in fast food consumption and the lack of time due to study and night shifts and long working hours are reasonable causes. In a study on the nutrition status of medical students in Mashhad in 2013, students reported the main reason for not using snacks was the lack of time or high cost of healthy meals, while 88% of them were aware of a healthy diet (15).

In the present study, the highest subscales of lifestyle (93%) in first and last year medical students were related to opiate and drug abstinence among students. Internal studies are significantly lower than all foreign studies due to the illegal use of alcohol in our country and people's religious beliefs and cultural beliefs. Medical student's knowledge and the clinical evidence on the harmful effects of these substances on physical health is also one of the factors hindering their use.

The mean of cigarette smoking was 2% and 3% in the two groups where no significant difference was seen. In a 2010 study of Zagreb students by Nola et al, more than one-third (35%) of students were smokers, indicating the cultural differences of societies (2). High knowledge of medical students about the effects of smoking and its adverse effects, plays an important role in refraining from taking it.

The mean disease prevention score was estimated to be around 80% in both groups, which can be attributed to good physical health in this age group and sexual health, given the importance of hand hygiene, pressure control and vaccination in medical students (hepatitis B, tetanus and influenza), which is consistent with the study of Hosseinialhashemi et al, in Shiraz regarding high awareness and attitude about hand hygiene among health care workers (16).

The mean score of spiritual health was high in the two groups while no significant difference was seen, which is expected because of the religious community. In the 2010 study by Hsiao et al, the level of spiritual health of Taiwanese nursing students was also moderate (17).

The level of social health in both groups was higher than the average, which is in line with the study by Karimi et al in Tehran medical school (18) and contradictory with the study by Khalooei and Karamatili in Kerman medical students (19).

Mental health was higher than average between the two groups and there was no significant difference. The importance of stress control and hope for the future in this ages and occupation seems more and more important than any other. The survey conducted by von Bothmer and Fridlund regarding nursing students in 2006 also found that most students were in a moderate situation (4). However in the study by Ghaderi et al, the prevalence of psychiatric disorders in the first year was higher than other students while the mental health of the students was low, which is inconsistent with this study (20).

The mean score of accident prevention in the two groups was moderate to high.

Environmental health score was favorable in the two groups, which was correlated with the study by Golafrouz Ramezani and Tahsini about Kurdish students (21).

Although students in our study had average to high scores in most aspects, however in some aspects such as nutrition and physical activity need more attention and planned interventions, especially in married people who have more conflicts and fewer opportunities than single people. Changes in improving a healthy lifestyle among students have proven to be a fact.

Conclusion

Overall, the results of this study showed no significant difference in mean lifestyle scores between first and last year students. Efforts are needed to assist students in pursuing healthy lifestyles. Therefore, it is recommended to study on student attitudes in addition to knowledge and remove existing barriers.

It seems that, there is a need to plan and implement barriers, expand facilities, implement necessary interventions, and to develop a comprehensive plan to educate and encourage health-promoting behaviors among students accordingly.

Limitations of the study

Most aspects of lifestyle have been explored in this study. However, future research can be conducted by focusing on the remaining details such as study hours and stress too.

The limitations of the present study are the small number of students and the lack of observation of their actual behavior regarding healthy lifestyles. Such cross-sectional studies cannot show causality and changes in lifestyle-related behaviors over time. Further studies should be suggested, more participants will be distributed, not only in terms of number but also across the different faculties of medical university. The long-term and two-step study on one group is also very applicable. As well as expanding the scope of this research, a more comprehensive evaluation of the subject is also possible.

Authors' contribution

HA, ZF, AH and MT were the principal investigators of the study. HA, ZF and MT were included in preparing the concept and design. ZF and AH revisited the manuscript and critically evaluated the intellectual contents. All authors participated in preparing the final draft of the manuscript, revised the manuscript and critically evaluated the intellectual contents. All authors have read and approved the content of the manuscript and confirmed the accuracy or integrity of any part of the work.

Conflicts of interest

The authors declare that they have no competing interests.

Ethical issues

The research followed the tenets of the Declaration of Helsinki. The ethics committee of Isfahan University of Medical Sciences approved this study (IR.MUI.MED.REC.1398.231). Accordingly, written informed was consent taken from all participants before any intervention. This study was extracted from M.D thesis of 397005 at this university. Besides, ethical issues (including plagiarism, data fabrication and double publication) have been completely observed by the authors.

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