



## The Impact of Knowledge, Attitude of Health Sciences College Students towards Lifestyle Modifications during Clinical Training in Saudi Arabia

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### ABSTRACT

**Background:** Unhealthy lifestyle lead to several comorbidities, although the health colleges students have greater awareness about the healthy lifestyle compared to non-health science students. However, the awareness does not mean that they are practicing healthy habits and diet in their life. moreover, the health college students experience more stress thus they have unhealthy diet and less physical activity, therefore they are going to fail in implementing the health education awareness for their patients as future health care providers. **Method:** A cross-sectional study among health colleges in their clinical training years in different universities in Saudi Arabia to evaluate the impact of knowledge, Attitude of health college students towards lifestyle modifications during clinical Training. **Results:** Overall response rate was 100% (1005/500) 79% were females. The smoking rate among the preclinical students (23.0%) was higher than the clinical students (18.7%) with nursing colleges ranked the highest (26.4%). The prevalence of physically active students was 43.2% in preclinical and 48.2% in clinical students ( $p=0.04$ ). Additionally, performing routine checkup among the preclinical students was (29.1%) opposite to clinical students (38.4%) ( $p=0.019$ ). **Conclusion:** The main finding in our study shows that Clinical students generally improved their behavior more than preclinical students.

**Keywords:** PlaHealth college students, Lifestyle modifications, Clinical training, Health education, Smoking

**Abbreviation:** IRB: Institutional Review Board; PNU: Princess Nourah University; KSU: King Saud University; SPSS: Statistical Package for Social Sciences

### INTRODUCTION

An unhealthy lifestyle is a major negative determinant of health and a risk factor for many diseases, including chronic heart disease, diabetes mellitus, obesity and hypertension. In contrast, a healthy lifestyle reduces health hazards, improves mental state, and increases productivity while decreasing days of work missed. In addition, physical activity will reduce the risk of chronic comorbidities [1].

Students of health colleges begin their clinical training and direct interactions with patients starting from their third year and continue until their final year. This is a challenging change compared to the didactic teaching and lectures of the preclinical years, but it offers valuable hands-on experience, which will inform their future careers later on.

During clinical training, students are exposed to patients with different diseases in many specialties. This produces legitimate questions and concerns regarding preventive measures, the knowledge and attitude of lifestyle modifications that would ultimately help in making sense of the disease pathogenesis, risk factors and the building of a proper management plan.

It has been established that students of health colleges have a greater awareness of the importance of a healthy lifestyle compared to students of other colleges. However, this increased awareness does not necessarily mean that they are engaging in healthy habits and incorporating a healthy diet in their lives. Health college students experience more stress and lack of time; thus, they are more likely to have an unhealthy diet, and engage in less physical activity. This

may negatively impact their ability to offer proper health education and promotion to their future patients, and in the long term leaves them at risk of acquiring the many diseases they will be counselling their patients about [2]. To the best of our knowledge there have been no studies conducted in Saudi Arabia assessing the impact of knowledge and attitude towards lifestyle modification among students of health colleges during clinical training.

The aim of this research is to assess changes in students' health and lifestyle behavior before and after starting their clinical years by enquiring about their diet, salt intake, physical activity and smoking, and to study the impact of these changes on their usual lifestyle habits. The outcome of this study is expected to identify healthcare students' real-life application of the knowledge gained regarding lifestyle during clinical practice. Thereafter, we can gauge the need for establishing more health awareness campaigns promoting the importance of a healthy lifestyle targeted towards students of health colleges.

### METHODS

A cross-sectional study carried out among students of health colleges from Princess Nourah University (PNU), King Saud University (KSU), AlMaarefa University and other universities in Saudi Arabia. This study included 1005 health college students recruited through convenience sampling. Two-hundred and thirteen students were in their preclinical years and 792 in their clinical years. A total of 215 males and 790 females were selected randomly. For data collection, a modified WHO STEP instrument questionnaire was used. In addition, demographic details, diet, salt intake, practice of physical activity, and smoking were assessed.

The questionnaire consisted of five sections; the first section contained demographic data. The second and third sections assessed knowledge and attitude of physical activity and diet, and the fourth enquired about smoking. The final section of the questionnaire measured knowledge, attitude and the level of lifestyle modifications after joining a health specialty. Statistical Package for Social Sciences (SPSS) version 21 was used for data entry and analysis. Results were expressed as percentages and proportions. The chi-square test was used to assess observed differences between categorical variables. A p-value of less than 0.05 was considered as significant.

### RESULTS

Overall response rate was 52%. Twenty-one percent were males and 79% were females. Medical students comprised 37% of respondents, applied medical sciences 25%, nursing 21%, pharmacy 12%, and finally dentistry comprised 5% of total respondents. The number of students from clinical years (79%) was considerably higher than preclinical years (21%). More than half of our participants (58.6%) were from PNU, while 22.1% were from KSU, 9% from AlMarefaa College, and 2% from Alfaisal University. The remaining 8.4% were students from other universities in the kingdom.

Prevalence of smoking was found to be 23% in preclinical years and 18.7% in clinical years. Distribution of smokers among colleges was as follows: 22.9% in the college of medicine, 26.4% in the college of nursing, 20.2% in the college of pharmacy, 11.3% in the college of applied medical sciences, and 7.8% in the college of dentistry. Prevalence among genders was 31.2% and 16.5% for males and females, respectively.

The prevalence of healthy diet was very similar at 66.7% for preclinical students and 65.5% for clinical students. The level of healthy diet habits among colleges was 61.7% in the college of medicine, 65.9% in the college of nursing, 64.7% in the college of pharmacy, 71.5% in the college of applied medical sciences, and 68.6% in the college of dentistry. Results were almost identical when comparing between genders, at 65.1% for males and 65.9% for females.

The level of physical activity among students was measured and found to be 43.2% in preclinical students and 48.2% in clinical students. The prevalence of physically active students among the colleges was 63.5% in the college of medicine, 76.4% in the college of nursing, 65.5% in the college of pharmacy, 63.8% in the college of applied medical sciences and 68.1% in the college of dentistry. Prevalence was similar among males and females, at 71% and 65.7% respectively. Finally, the percentage of students who performed routine checkups was 29.1% for the preclinical level and 83.4% for the clinical level (Tables 1 and 2).

**Table 1 Assessment of physical activity, diet and smoking among preclinical and clinical students**

		Preclinical	Clinical	p-value
Physical activity	Active	43.20%	48.20%	0.04
	Not active	56.80%	51.80%	
Diet	Healthy	66.70%	65.50%	0.756
	Unhealthy	33.30%	34.50%	
Smoking	Smoker	23.00%	18.70%	0.159
	Non smoker	77.00%	81.30%	

**Table 2 Assessment of knowledge, attitude and lifestyle modification after joining health college**

		Preclinical	Clinical	p-value
Exercising Regularly	Improved	43.20%	48.90%	0.04
	worsen	15%	18.60%	
	No change	41.80%	32.60%	
Eating more of vegetables servings per day	Improved	48.40%	51.60%	0.694
	Worsen	13.10%	12.50%	
	No change	38.50%	35.90%	
Eating more of fruits servings per day	improved	42.30%	49.10%	0.204
	Worsen	15%	13.50%	
	No change	42.70%	37.40%	
Taking multi vitamins without prescription	Improved	29.10%	35.10%	0.042
	Worsen	16.40%	10.70%	
	No change	54.50%	45.20%	
Taking Painkillers without prescription	Improved	34.30%	36%	0.643
	Worsen	15%	16.80%	
	No change	50.70%	47.20%	
Taking antibiotics without prescription	Improved	30%	33.20%	0.65
	Worsen	17.40%	17.40%	
	No change	52.60%	49.40%	
Frequency of eating junk food	Improved	34.70%	36%	0.8
	Worsen	26.30%	27.50%	
	No change	39%	36.50%	
Quitting unhealthy habits, energy drinks/ smoking	Improved	31.90%	35.60%	0.604
	Worsen	22.50%	21.10%	
	No change	45.50%	43.30%	
Taking herbal remedies	Improved	29.60%	27.10%	0.252
	Worsen	14.10%	10.90%	
	No change	56.30%	62%	
Performing routine checkup	Improved	29.10%	38.40%	0.019
	Worsen	13.60%	9.20%	
	No change	57.30%	52.40%	

Taking flu vaccine	Improved	37.60%	42.90%	0.09
	Worsen	13.60%	9%	
	No change	48.30%	48.10%	

**DISCUSSION**

It was assumed that students of clinical years would be more engaged in a healthier lifestyle compared to preclinical students. Overall, the rate of smoking among preclinical students was higher than that of clinical students, this may be explained by a lack of awareness and exposure to the harms of smoking during clinical practice. Among all health specialties, nursing had the highest percentage of smoking (26.4%). This is may be due to the stressful environment the students face and might be compounded further by low socio-economic status. Another study found that there was a high prevalence of smoking among medical students [3].

Upon surveying the level of healthy dietary habits of students, no significant change was found after the transition from preclinical to clinical years, at 66.7% and 65.5% respectively. These results were similar among different colleges and gender. Also, we surveyed for any increase in the consumption of vegetable and fruit servings per day, and the frequency of eating junk food weekly in preclinical and clinical students. No significant increase was found between them.

This may be due to the introduction of nutrition lectures early in the curriculum. This is also supported by studies showing that medical students are generally healthy [2] and have better knowledge regarding diet, lifestyle, and exercise [4].

The results also demonstrate that the level of regular exercise improved significantly in clinical students (48.2%) compared to preclinical students (43.2%). Among colleges, nursing and dentistry had the highest rate of physical activity, 76.4% and 68.1% respectively. This could be explained by the increased knowledge and perception about healthy lifestyle in these students. This is in line with a study that found that 60.6% of medical students engaged in physical activity [5].

Use of multivitamins without a prescription was 29.1% in preclinical students compared to 35.1% among clinical students, attributable to the increased knowledge and awareness about the benefits of multivitamin consumption. Also, there was no significant increase in analgesic and antibiotic use without a prescription in both groups.

There was no improvement in cessation of unhealthy habits such as energy drink consumption and smoking among preclinical and clinical students. This may be due to stressful conditions and the need for energy drinks to keep the students active and awake during prolonged working hours. This finding is similar to another study, which demonstrated that medical students exhibit high rates of energy drink consumption [6].

There was a significant increase in the number of students acquiring routine checkups, from 29.1% in preclinical students to 38.4% in clinical students. This can be explained by the exposure to the benefits of performing early checkups, such as early detection of diseases and increased cure rate. No supportive evidence of this finding was found in the literature.

The survey results regarding flu vaccination before and during clinical years showed no significant difference (37.6% and 42.9% respectively). This is explained by lack of knowledge about the benefits and side effects of the vaccine. Similar results were reported in another study [7].

**CONCLUSION**

Clinical students generally improved their behavior more than preclinical. But the superior knowledge of health college students about the healthy life style doesn't necessarily results in better practice , Indeed There is a need to conduct campaigns focused on improving students' knowledge about healthy lifestyles, so they become more capable in their future as healthcare providers to advise and encourage patients in that regard. Additionally, we suggest that community medicine departments introduce lectures to the curriculum highlighting the importance and benefits of living a healthy lifestyle.

## DECLARATIONS

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### Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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