



## KNOWLEDGE, PRACTICE AND ATTITUDE REGARDING LIFESTYLE MODIFICATION AND HEALTH BEHAVIOR AMONG MEDICAL STUDENTS\*

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### ABSTRACT

**Background:** Lifestyle is described as the living environments, activities, and practices that one chosen, and manifest it in daily life. Medical school is always a challenging period bringing unhealthy lifestyle patterns and undesired changes in student life. Scientific studies confirmed that there is a lot of burden of such unbalanced routine and unplanned changes that play an important role in the development of many ailments. Pakistan, being a developing country lies under burden of number of diseases which include obesity, diabetes and hypertension. Health experts stated in their study that adoption of western lifestyle in eastern countries reduced overall physical activity due to increased consumption of fast food, snacks sweets and soft drinks. It not only effect their physical health but mental health as well.

**Methods:** A cross sectional study, curbed to the city Karachi, Pakistan, during a period of 2 months, between March 2019 and April 2019. The aim of the study is to evaluate the knowledge, attitude and practice of medical students, from various medical universities and departments, within Karachi, concerning their lifestyle adaptation and unhealthy behavior. Individuals from different medical universities and from the multiple departments i.e. MBBS, BDS, Pharm D. and DPT were enrolled. Data analysis was carried out using SPSS v.22.0. Percentages and frequencies were considered for categorical responses.

**Results:** A total of 350 students were included in this study. Out of these [231, 66%] experienced frequent tension type headache twice a month. Uponquestioning regarding its intensity, on a linear scale of 1-10, [93, 26.5%] ranked it mild (1-4), [108, 30.8%] found to have moderate level (5-7), [147, 42%] has severe (8-10) and [69, 19.7%] reported to had very extreme episode (>10) of headache. Sleeping is consider as a best stress reliever. When interrogated for reason majority show little water intake and skipped breakfast routine. Many (n=71) have been into compulsion habits. The diet of female students was healthier when compared. When asked foe hours of study/ day aprodigious response was obtain (p=0.021). Some degree of members in this study has limited screen exposure (p=0.178). Though, aconsiderableamount of populaces don't do any part time job (p=0.497).

**Conclusion:** In order to combat the unhealthy lifestyles in medical students, it is recommended that awareness programs should be put in place to educate these students. It is essential to promoteducate among medical students about healthy life style. Co-curricular activities should be a major part of medical course to diminish stress level, improve mental health and develop a mentally and emotionally stable doctor.

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### INTRODUCTION

The lifestyle of a particular person or group of people is defined as the living conditions, behavior, and habits that are typical of them or are chosen by them, and they manifest this behavior in coping. Withtheir physical, psychological, social, and economic environments on a day-to-day basis [1]. They also modify this set of behavior, to better adjust to the environment. This lifestyle modification begins since birth, is carried on throughout life, and transmitted along generations

as well. A study Case *et al.* (2002) shows that there is a large correlation of parental lifestyle with that of the child's lifestyle and health. If a child between the ages of 0–3 has a mother in excellent health, the chances for that child of being also in a very good or excellent health are 27% larger, which shows both a genetic component of health and lifestyle, as well as an environmental component. [2]. with rapid modernization of the world, there have been severe shifts in lifestyle paradigms. On one hand it results in a better health and longevity, on the other hand it brings along issues such as obesity, hypertension, and

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diabetes. This shift in lifestyle pattern in middle income countries has resulted in rapid increase in obesity and other comorbid in the younger generation which can lead to grave consequences. Obesity, associated with raised lipids, blood pressure, raised blood sugar and chronic stress is a major risk factor for diabetes mellitus type 2, cardiovascular pathologies and all-cause mortality [3], with 20-25% of the world population having the risks of metabolic syndrome and its associated consequence[4] Fortunately, almost 80% of these consequences(stroke, diabetes type 2, hypertension) can be prevented by appropriate lifestyle modifications, including a healthy diet, regular exercise, and avoiding use of drugs such as tobacco[5]. The onset of these diseases in younger populations will lead to more economic burden on the already staggering economics of middle and low income countries [6]. Obesity is the leading preventable cause of death worldwide, with rising rates in both adults and younger populations [7]. Public health experts conducted a study in Ouagadougou, Burkina Faso and found that adoption of western lifestyle and urbanization in eastern countries, including increased consumption of fast food, snacks sweets and drinks high in sugar and low on nutrients, frequent nibbling, and overall reduced physical activity is on the rise and is extremely detrimental to both, their physical and mental health, as well as their overall benefit as the country's backbone in contributing to the economy [8].

Diet and physical activity are two major factors affecting the overall health of an individual, and constituting the guidelines for their lifestyle patterns accumulation of fat occurs whenever there occurs unbalance between the body intake and expenditure, [9]and with easy availability, lack of control of elders and financial autonomy amongst teenagers has resulted in easy access to such detrimental westernized diet. Teenagers prefer to stay indoors, work on computers or mobile phones, and avoid outdoor activities and sports, further aggravating the rising figures of obesity and company. A study found that teenagers and young adults should do at least 150 minutes of moderate exercise per week, with vigorous exercise working the major muscle groups at least twice a week [10]

Pakistan is a middle-income country with a huge burden of diseases including obesity, diabetes and hypertension, and with little to none preexisting data regarding lifestyle patterns of medical students. Hence, this study is conducted in a medical institute of Karachi, to determine orientation and lifestyle patterns of medical students, as they begin gaining knowledge about various diseases, as well as lifestyle implications on the different co-morbidities at the undergraduate level. The study aims of creating awareness and working towards wellness of the lifestyle with adequate modifications so that these individuals can come forth as the forerunners of tomorrow's economy as healthy physicians.

## METHODOLOGY

A cross sectional study, confined to the city Karachi, Pakistan, was conducted. Consecutive sampling and digital sampling techniques, throughout a period of 2 months, between December 2018 and January 2019 were used to collect the data. The goal of the study was to assess the knowledge, attitude and practice of medical students, from different medical universities and departments, within Karachi, regarding their lifestyle modification and health behavior. The sample size required for this study was 384 people, with 95 % confidence, calculated using [www.openepi.com](http://www.openepi.com). People

from different medical universities of Karachi and from the departments of MBBS, BDS, Pharm D. and DPT were recruited.34 participants declined to participate in the study. Therefore, only 350 questionnaires were considered for the data analysis. Verbal consent was taken from the members before a one-on-one interview, and they were openly made aware of their right to leave at any point, as per their will. Those who filled the forms digitally on Google form had to either fill them totally, or ignore it completely.

The data collection means used, was a self-structured questionnaire in English, aimed to be easily understood by students of any and all medical institutes of Karachi. The only restriction we kept was that the participant should be an undergraduate student from the medical universities of Karachi. Exclusion criteria: 1. incompletely filled questionnaire. 2.All the faculty members/house officers/post graduate or students belonging to any other above mentioned program). Participants were asked identical questions during their interviews, to remove bias. The dispersal of the questionnaires, as well as the conductance of the interviews, was done by each fellow of the research team, thereby eradicating interviewer bias. The questionnaire itself did not require the names of the participants, and privacy of the data was rigorously upheld, to make it certain that there was no response bias.

Firstly, a pilot study was conducted, and alterations were made to the questionnaire consequently. The final designed questionnaire had a total of 32 questions. Data concerning participants' age groups, marital status and names of related institutes was dig out, followed by investigations evaluating their stress level before and after admitting to medical college and how the managed it. Data analysis was carried out using SPSS v.22.0. Percentages and frequencies were considered for categorical responses, while Mean and Standard deviation were used for qualitative data. Chi-square and Mann Whitney U test was used. The statistical significance was taken at  $p < 0.001$ .

## RESULT

A total of 350 students were included in this study of which [314, 89.7%] were females and [77, 22%] were males. Of these [231, 66%] reported to had experienced frequent tension type headache at least two episodes per month and upon inquiring about its intensity, on a linear scale of 1-10, [93, 26.5%] graded it mild (1-4), [108, 30.8%] moderate (5-7), [147, 42%] severe (8-10) and [69, 19.7%] reported to had very severe (>10) headache. Students were asked to document their stress level on a linear scale of 1-10 after getting into medical school. [139, 39.7%] students ( $p$ -value= <0.001) had stress severe stress while [252, 72%] students reported mild to moderate stress. When questioned about factors contributing to stress 82% (198) females and 20% (45) males opted for balancing social and personal lifestyle as depicted in table 1.

**Table 1** Factors Contributing To Stress In Medical School

Factors	Male	Female
Increased academic burden	54 (18.6%)	44 (63.8%)
Fear of getting poor grades in module	37 (16.4%)	188 (83.6%)
Balancing the social academic and healthy lifestyle	45 (18.5%)	198 (81.5%)
Lack of adequate sleep	35 (17.3%)	167 (82.2%)
Transport problem	19 (16.45%)	97 (83.3%)
Maintaining compulsory attendance	36 (17.6%)	168 (82.4%)
Others	2 (14.2%)	12 (85.7%)

We then looked into different variables that students have adapted after getting into medical school. They were asked about management of stress to which 47 (18%) males and 219 (82%) females found sleeping as best option for them. 36 students were using medication to relieve their stress however remaining were dealing it with yoga, listen to music, undertaking their hobbies or in the ways they feel better, As shown in table 2. Majority have a very low water intake and most of the time they skipped breakfast. Most of the students (n=71) have been into compulsion habits. The reason of their addiction according to 51 students was for inner peace while other were having it because of friends motivation (n=7), to relieve study burden (n=32) and to get rid of excessive stress (n=27). A large number of students (n=304) were getting sleep of 5-7 hours and had diagnosed themselves with disturbed sleep. There was also marked increase in weight of many students and few had no change at all since their admission. The diet of female students was found to be healthy consisting of vegetables and fruit (86%) and homemade food (80%) while 87% males had snacks, biscuits and dry items as major part of their diet. A large number of students (n=208) rarely engulf them in co circular activity and 51 students were regularly exercising. The time they(n=295) spend in study was 1-4 hours daily while the average screen exposure was found to be more than 4 hours for 50% of students.

**Table 2** Lifestyle Changes after Getting Into Medical School

Variables	Male	Female	P-value
Management of stress			
Yoga/workout	19 (27.5%)	50 (72.5%)	
Sleeping	47 (17.7%)	219 (82.3%)	
Undertaking hobbies	29 (21.8%)	104 (78.2%)	0.071
Medication	5 (13.9%)	31 (86.1%)	
Listening to music	33 (19.1%)	140 (80.9%)	
Others	6 (17.1%)	29 (82.9%)	
Daily water intake			
2-5 glasses/day	21 (14.9%)	120 (85.1%)	
5-7glasses/day	30 (22.6%)	103 (77.4%)	0.302
7-8 glasses/day	24 (23.1%)	80 (76.9%)	
Having breakfast			
Regularly	45 (20%)	180 (80%)	
Sometimes	16 (15.8%)	85 (84.5%)	0.437
Don't like to eat	9 (21.4%)	33 (78.6%)	
Don't have	7 (30.4%)	16 (69.6%)	
Compulsion habits			
Smoking			
Caffeinated drinks	7 (87.5%)	3 (12.5)	
Alcohol	2 (60%)	1 (40%)	<0.001
Marijuana/heroine/cocaine	3 (75%)	2 (25%)	
Over the counter drugs	3 (75%)	1 (25%)	
Pan/chaliya (betel nut)/ gutka	2(100%)	0 (0%)	
None	48 (17.2%)	231 (82.8%)	
Sleep			
1-4 hours	17 (23.3%)	56 (76.6%)	
5-7 hours	58 (19.1%)	246 (80.9%)	0.785
8-10 hours	2 (15.4%)	11 (84.6%)	
More than hours	0 (0%)	1 (100%)	
Weight changes			
Increased	35 (23.2%)	116 (76.8%)	
Decreased	21 (16.9%)	103 (83.1%)	0.379
No change	21 (18.1%)	95 (81.9%)	
Diet mostly consumed			
Fast food	16 (32%)	34 (68%)	
Vegetables and fruits	9 (133.8%)	56 (86.2%)	
Snacks/ biscuits/ dry items	84 (86.5%)	13 (13.5%)	0.405
Cold drinks and beverages	10 (35.7%)	18 (64.3%)	
Homemade	21 (19.6%)	86 (80.4%)	
Oily food	7 (25.9%)	20 (74.1%)	
Part time job beside studies			
Yes	15 (22.7%)	51 (77.3%)	0.497
No	62 (19.1%)	263 (80.9%)	

Participation in co-curricular activities	Male	Female	P-value
Daily	15 (38.5%)	24 (61.5%)	<0.001
Weekly	18 (42.9%)	24 (57.1%)	
Sometimes	23 (22.5%)	79 (77.5%)	
Very rare	21 (10.1%)	187 (89.9%)	
Daily study hours			
1-4 hours	55 (18.6%)	240 (81.8%)	0.021
5-7 hours	6 (15.4%)	33 (84.6%)	
8-10hours	15 (28.3%)	3 (75%)	
More than 10 hours	1 (25%)	86 (81.8%)	
Average screen exposure			
1-2 hours	9 (14.5%)	53 (85.5%)	0.178
2-3 hours	25 (27.2%)	67 (72.8%)	
3-4hours	18 (19.8%)	73 (80.2%)	
More than 4 hours	25 (17.1%)	121 (82.9%)	
Regular exercise habit			
Yes	14 (27.4%)	277 (81.5%)	0.135
No	63 (18.5%)	5 (83.3%)	

Individuals who participate in co-curricular activities (p<0.001) show a significant relation. Daily water intake and management of stress illustrate an insignificant association (p=0.07) and (p=0.302). Majority of population do regular exercise (p=0.135) where as a major weight change was noted (p=0.379) after getting into medical school. A large proportion of individuals take regular breakfast (p=0.437). A considerable population has 7-8glass of water/day (p=0.302). A prodigious bulk of individuals don't take part in compulsive habits (p<0.001). Snacks/ biscuits and dry items are the most popular diet consumed among them (p=0.405). Widely held individuals take a proper sleep (p=0.785) of 5-7 hours/day. An overwhelming response was obtain when asked foe hours of study/ day (p=0.021). a limited members in this study has low screen exposure (p=0.178). However, an appreciable number of people don't do any part time job beside studies (p=0.497).

## DISCUSSION

We found after getting into medical school students have adapted an unhealthy lifestyle. This situation is worrisome, hypocritical and raises question on doctors eligibility as being a future healthcare professional these students will not be able to influence their patients lifestyle and correctly implement the medical knowledge which they are not able to follow themselves. Previous studies have also reported same finding where students are mostly stuck to an unhealthy lifestyle and majority even reported to have some diagnosed disease after getting into medical school (11, 12, 13).According to our findings majority of students reported to have been living a stressful life (p-value= <0.001) since their admission in medical school. The most important factor is increased academic burden and intense pressure of maintaining a good cGPA. This has ultimately lead to inadequate sleep and associated interpersonal relationship problems causing unbalanced personal, social and academic life.Results are similar to study performed in Lahore, in which they found high prevalence of academic stress and poor sleep quality among medical students. Many students require sedatives more than once a week. They also found academic stressor to be a significant factor contributing to stress (14).In a developing country like Pakistan where basic facilities are still not available it's not shocking to found 83.3% females reported to have stress because of transport related issues.

When looked into management of stress, students gave a good response and are managing their stress by undertaking different activities. Still a great number of students prefer to equate their sleep disturbances in past time. Few have been into compulsion habits because of excessive stress. A research

designed to look substance abuse amongst the medical graduate students in a developing country found nearly one-fifth of medical students abuse at least one substance despite knowing the ill effects. The main predisposing factor is the psychological stress, a finding similar to ours (15). In comparison to this, systemic review in Brazil; a developed country; on the use of drugs, licit or not, found an increasing prevalence of drug consumption in medical students, major factor being stress. Students who do not use psychoactive drugs are more likely to live with their parents, to disapprove drugs consumption, to practice religious beliefs and to be employed (16). According to our research the number of students abusing, is comparatively low. The possible explanation of this is extensive joint family systems, a source of more social support. Further this is associated with strong social stigma and religious influences in our society.

However, the quality of life is greatly disturbed. Starting from breakfast to meal consumed mostly and daily water intake, to our surprise majority of "medical" students has unhealthy lifestyle. The major issue seems to be lack of time where most of the students are skipping breakfast to get onto university bus on time. It is seen that males are consuming snacks and females homemade items mostly. In Pakistani culture males are usually pampered a lot and depends on their mothers, sisters and wives for most of their personal activities like cooking, washing etc. this could explain the increase consumption of homemade food by female students as they are more self dependent. Weight changes are equally seen in both genders. Co-curricular activities participation is found to be low and few students exercise regularly. Students are found to spend a lot of time on phone, average screen exposure of more than 4 hours while hardly giving 1-4 hours to studies. Medical education based more on academic learning require effective study time which is not possible because of increased screen exposure, stressful life, inadequate sleep and lack of time. All these factors together contribute to decreased academic performance and dissatisfaction. The ultimate sequel is majority students reported to have frequent tension type headache ranging from moderate to very severe. Few opted to have mild headaches. Finding similar to study performed by Menon.B *et al* [17].

## CONCLUSION

Medical students are important part of society and are future healthcare professionals. Their deteriorating lifestyle will pose a negative impact on doctor-patient relationship in future. A patient is more likely to follow his doctor's advice when the doctor himself is practicing a healthy lifestyle. Furthermore, stress, sleep disturbances and unhealthy lifestyle all are major contributors towards many debilitating and chronic illnesses, most important being heart disease and its associated long-term sequels. There is a need to reeducate medical students regarding maintenance of healthy life style. Co-curricular activities should be a part of medical curriculum to decrease stress, improve mental health and provide more mentally and emotionally stable doctors to society.

## Limitations & Future Recommendation

There are certain limits in our research. This research is conducted on 350 students of Dow University of Health Sciences, a government setup medical university. The sample size is small and only one area is targeted thus, increase chances of a more biased result. Further research is needed

with a large sample size covering other government universities and private setup university as well to give a more accurate result. Lifestyle of students is assessed randomly with all batches participating equally and no data of comparison between batches so it is difficult to identify whether there is increased deterioration in healthy lifestyle with advancement of academic years or not. A more enhanced evaluation is needed to identify stress related personality disorders and behavioral changes which is lacking in our research.

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