

Lifestyle behavior of budding health care professionals: A cross-sectional descriptive study

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ABSTRACT

Background: College life is a crucial period and at this age, students are more likely to get involved in unhealthy lifestyle behavior like poor dietary habits, physical inactivity, and use of substances, etc. **Objectives:** Study objectives were to determine the lifestyle behavior of budding healthcare professions and to determine the association of bio-physical profiles with their personal profile, activity, sleep, and dietary pattern. **Settings and Design:** The current study adopted a cross-sectional design and carried out during May - June 2019 among 284 participants of tertiary care institute. **Methods and Material:** Participants were selected through a proportionate stratified sampling technique. Self-structured questionnaire and Likert scale were used to assess the lifestyle behavior of participants. Descriptive and inferential statistics were used for data analysis. **Results:** Majority of participants (70.7%) preferred junk food as a substitute of meal. Significant number (68.3%) of students did not exercise regularly and 30.9% have disturbed sleep pattern. One-third of them (34.5%) were in pre-hypertensive stage and alarming number of them having unacceptable body mass index (BMI) (24.7%) and waist hip ratio (28.5%). Increased BMI was significantly associated with male gender ($P = 0.01$) and sleep deprivation ($P = 0.03$). Significantly more male participants were hypertensive and pre-hypertensive ($P = 0.001$). **Conclusions:** Study data indicated that having knowledge regarding health is not enough to ensure that health professionals will follow healthy lifestyle and it is important to motivate budding health care professionals to practice healthy lifestyle with an aim of health promotion and prevention of diseases.

Keywords: Biophysical profile, budding health care professionals, dietary pattern, lifestyle behavior

Introduction

Lifestyle behavior is a way of living that can be determined through healthy or unhealthy practices. Healthy lifestyle behavior is a way that includes physical activity, balanced diet, avoidance of substances use, and stress management.^[1] As per World Health Organization (WHO) report, ~60% of contributing factors to health and quality of life of individuals are related

to lifestyle. In recent decades, most of the people followed unhealthy lifestyle behavior and therefore, the burden of various non-communicable illnesses like hypertension, obesity, metabolic diseases, and cardiovascular diseases have increased in the country.^[2]

It has been estimated that by 2020, these illnesses (non-communicable) will be accountable for seven out of every ten deaths in developing nations.^[3] Further, another paper has documented that chronic illnesses are beginning to hit the young population instead of only being restricted to adults.^[4] Obesity, the fifth leading cause of death around the globe is increasing at

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an alarming pace and physical inactivity and poor eating pattern are among the main-related factors for the obesity epidemic.^[5]

The transition from school to college is a crucial period because students in this phase face enormous challenges which include adapting to new social environments and lifestyle changes.^[6] During this age, students are more susceptible to adopt and practice unhealthy lifestyles like poor dietary habits, use of substances, physical inactivity, etc.^[7] Studies carried out among medical and nursing students reported that even though budding healthcare professionals are well informed about the significance of practicing unhealthy lifestyle but still they did not follow the suggested guidelines for health lifestyle.^[8] Healthy lifestyle plays a vital role in maintaining good health. Daily exercise routine and good dietary patterns have been reported as having promised benefits for psychological and physical fitness and good academic performance.^[7,8] Therefore, assessing the lifestyle of university students is crucial for developing tailored health promotion actions aimed at enhancing students' quality of life.

Medical field is a challenging and stressful profession and participants who are studying at universities tend to develop unhealthy lifestyle behavior.^[9,10] Inadequate exercise routine, inadequate sleep, and poor dietary habits by budding healthcare professionals cannot be ignored. Lifestyle behavior practiced by college students is gaining an increased attention in developing countries like India because lifestyle is an element, which has a significant impact on quality of life.^[11] Lifestyle behavior of college students or young adults has become an interesting research area around the globe.

Various studies^[11-13] carried out in United States of America (USA) and European countries had investigated the lifestyle behaviors of college students specially their dietary habits; physical activity, and sleep pattern that helped in forming further guidelines to promote healthy behaviors. However, there is limited literature on lifestyle behaviors among college students particularly budding health care professionals, which comprise the highly educated chunk of adolescents in India. Thus present study is a modest attempt to increase our knowledge on lifestyle behaviors among budding health care professionals and enhancing our understanding about healthy or unhealthy behavior that significantly affect students' present and future health.

Material and Methods

Study design and sample size

A cross-sectional descriptive study was conducted among nursing and medical students from tertiary care institute from May - June 2019. Study aimed to determine the lifestyle behavior of budding health care professions and to determine the association of bio-physical profiles with their personal profile, activity, sleep, and dietary pattern. There was 100% response rate as study participants were face-to-face interviewed and single measurement of height, weight, waist, and hip circumference

were taken on the first day after interview. However, three blood pressure readings are taken at the same time for three consecutive days using a single standardized android sphygmomanometer. The average time taken to administer the tool and recording measurements was 45 min.

Sample size was calculated by using formula, $=N/1+Ne^2$; where N = Population size (620), absolute error of 5%, confidence interval as 95%, and minimum estimated sample size needed was 276 approximately. An overall sample of 284 participants was selected, consideration 15% non-response rate.^[13] Participants were selected by using proportionate stratified sampling technique from each batch of the medical and nursing students.

Data collection measures

A self-structured questionnaire was used for data collection, which was validated by seven experts and was found reliable in pilot try-out ($r = 0.83$). Questionnaire consisted; four sections (a) Demographic profile (age, gender, academic discipline, and monthly income of family); (b) personal profile (history of substance abuse, exercise/activity, and sleep pattern.); (c) biophysical profile (body mass index, waist to hip ratio, and blood pressure.) and (d) dietary pattern (eating habits, main meals of the day, meal regularity, and reasons for skipping meals, skipped meals substitute, practice of fast, and frequency of eating outside the mess).

Body mass index (BMI) was calculated based on the measured weight and height of the participants and the waist to hip ratio was calculated after measuring waist and hip circumferences. The participants were categorized as underweight (<18.5), normal (18.524.99), and overweight (≥ 25) based on the WHO BMI chart while based on WHR; they were categorized in acceptable (0.9 or less in men and 0.85 or less for women) and unacceptable range. Furthermore, blood pressure was measured on three consecutive days with the same instrument and participants were categorized as normal ($\leq 120/80$ mm Hg), pre-hypertension (121/89/8189 mm Hg), and hypertension ($\geq 140/90$ mm Hg).

Ethical permission

Ethical clearance was obtained from the Institutional Ethics Committee wide letter no. ECR/736/Inst/UK/2015/RR/18 on 12-04-2019. Data were collected after getting formal permission from the concerned authorities. A written informed consent was taken from each student after explaining purpose of the study.

Statistical analysis

Descriptive and inferential statistics were used for analysis of data with SPSS version 23.0 as per the study objectives and hypothesis. In descriptive analysis, calculations were done by using frequency, percentage, mean, and standard deviation; and for inferential statistics, Chi-square was used to find association of participants' BMI and blood pressure with demographic variables.

Results

A total of 284 budding health care professionals between the ages, 17-25 were included in this study, of which 64.4% belonged to 20-22 years and 57.7% were females. The sample was constituted of participants from the academic year first to fourth. Little more than half (52.8%) of participants' family monthly income was rupees 44,480 or above. Personal profile of participants revealed that very few participants 11 (3.9%) had habits of bidi/cigarette smoking and only 3 participants smoke more than 10 bidi/cigarette per day, while 23 (8.1%) consumed alcohol and among them majority (15 participants) drunk alcohol occasionally. Furthermore, it was found that 31.7% of participants exercised daily followed by 41.5% who exercised occasionally and 26.8% did not exercise. Out of all, the most common pattern of exercise was walking (85.1%) followed by jogging (59.1%) and other sports (46.7%) while only 20.7% had practice of yoga. Furthermore, 30.7% of them did exercise for less than 15 minutes, while 25.5% did more than 45 minutes. In regards to sleep pattern, 69% had a routine of sleeping for 6-8 h, whereas 30.9% reported sleep deprivation and the reason for inadequate sleep were the use of mobile phone, media, and

friends among 71.4% participants and for 42% it was due to study and stress [Table 1].

The dietary pattern of participants revealed that for 62.3% were non-vegetarian and rest 37.7% were vegetarian. Majority of participant (74.6%) reported dinner and breakfast as the main meal of the day. Majority of participants (63%) had three meals pattern, while 28.9% skipped meal with substitute and 8.1% skipped meal without substitute. The main reasons of skipping meal were lack taste of food (58.1%), shortage of time (37.1%), and health/other factors (13.3%). Majority of participants (70.7%) preferred junk food and beverages as substitute for skipped meal, followed by fruits/juice (57.3%), while 39% preferred snacks (homemade preparation, dry fruits, biscuits, namkeen). Further, more than half of the participants (55.3%) reported occasional eating out followed by weekly (40.8%) and very few eat outside daily (3.9%). Very few participants did fast weekly (5.3%); while about one third of them practice fast occasionally (33.5%) [Table 1].

Based on participants' BMI values, 75.4% of the participants were in category of normal weight, and 12% and 12.7%

Table 1: Physical activity, substance abuse, sleep, dietary pattern of the participants (n=284)

Physical activity & substance abuse sleep pattern	f (%)	Dietary pattern	f (%)
Exercise/workout routine		Eating pattern	
No exercise	76 (26.8)	Non-vegetarian	177 (62.3)
occasionally	118 (41.5)	Vegetarian	107 (37.7)
Daily	90 (31.7)		
Specific type of exercise* (n=208)		Main meal of the day	
Yoga	43 (20.7)	Dinner & breakfast	212 (74.6)
Walking	177 (85.1)	Breakfast	14 (4.9)
Jogging	123 (59.1)	Lunch	28 (9.9)
Other (sports)	97 (46.7)	Dinner	13 (4.6)
		Lunch & dinner	17 (5.9)
Duration of exercise in minutes (n=208)		Meal regularity	
<15 min	64 (30.7)	Three meals regularly	179 (63.0)
16-45 min	91 (43.8)	Skipping meal with substitute	82 (28.9)
>45 min	53 (25.5)	Skipping without substitute	23 (8.1)
Substance abuse (n=34)		Reason for skipping meals*	
Smoking	11 (3.9)	Food not tasty	61 (58.1)
Alcohol consumption	23 (8.1)	Shortage of time	39 (37.1)
		Health factors	11 (10.5)
		Others	09 (2.8)
Number and amount of substances abuse(n=34)		Substitute for skipped meals*	
>10 bidi/cigarette per day		Junk food & beverages	44 (70.7)
>250 ml/sitting	3 (27.3)	Fruits/juices	47 (57.3)
	8 (34.8)	Snacks**	32 (39.0)
Duration of sleep		Practice of fast	
<6 h	58 (20.4)	Not at all	174 (61.3)
6-8 h	196 (69.0)	Occasionally	95 (33.5)
>8 h	30 (10.6)	Weekly	15 (5.3)
Reasons for disturbed sleep*(n=88)		How often you eat outside	
Use of mobile or media			
Chat with friends	52 (59.1)	Daily	11 (3.9)
Study	11 (12.3)	Weekly	116 (40.8)
Stress	16 (18.1)	Occasionally	157 (55.3)
	21 (23.9)		

*Multiple responses **Homemade preparation, dry fruits, etc.

were in overweight and under-weight category. For waist to hip ratio, 28.5% participants were in unacceptable range. About average systolic/diastolic BP (as it was measured three consecutive days), more than one-third (34.5%) participants were in pre-hypertensive category and 1.5% were suffering from hypertension.

Table 2 depicts an association of BMI with selected parameters of participants, that is, gender, exercise pattern, duration of sleep, eating habits, and meal regularity. It was found that increased BMI was found in participants with male gender ($P = 0.01$) and sleep deprivation ($P = 0.03$); while exercise patterns, eating habits, and meal regularity were not found to be associated with BMI ($P > 0.05$). Surprisingly, significantly

more number of males were pre-hypertensive or hypertensive as compared to their female counterparts ($P = 0.001$); while blood pressure of participants was not found to be associated with exercise pattern, duration of sleep, eating habits, and meal regularity ($P > 0.05$) [Table 3].

Discussion

In this study, about two-third of the participants were 20-22 years old and more than half of them were females. Further, 52.8% participants' family monthly income was Rs. 44, 418, or above. Similar findings have been reported for other related studies^[14-16] which found that most budding health care professionals were female and belong to 20-23 years of age group.

Table 2: Association of BMI with gender, physical activity, sleep, and dietary pattern of participants(n=284)

Demographic variables	BMI			χ^2/P
	<18.5 f (%)	18.524.9 f (%)	≥25 f (%)	
Gender				8.82/0.01*
Male	07 (5.8)	97 (80.8)	16 (13.3)	
Female	29 (17.7)	117 (71.3)	18 (11.0)	
Exercise routine				1.17/0.88
No exercise	11 (14.5)	58 (76.3)	07 (9.2)	
Occasionally	15 (12.7)	87 (73.7)	16 (13.6)	
Daily	10 (9.0)	69 (76.8)	11 (12.2)	
Duration of sleep				10.34/0.03*
<6 h	04 (6.9)	42 (72.4)	12 (20.7)	
6-8 h	01 (3.3)	26 (86.7)	03 (10.0)	
>8 h	31 (15.8)	146 (74.5)	19 (9.7)	
Eating habits				0.83/ 0.65
Vegetarian	16 (14.9)	79 (73.8)	12 (11.2)	
Non-vegetarian	20 (11.3)	135 (76.3)	22 (12.4)	
Meal regularity				0.82/0.93
Three meals regularly	25 (13.9)	133 (74.3)	21 (11.8)	
Skipping with substitute	09 (11.0)	63 (76.8)	10 (12.2)	
Skipping without substitute	02 (8.7)	18 (78.3)	03 (13)	

* Chi-square statistical analysis with significance at $P < 0.05$

Table 3: Association of BP with gender, physical activity, sleep, and dietary pattern of participants n=284

Demographic variables	Blood pressure			χ^2/P
	Normal f (%)	Pre-HTN f (%)	HTN f (%)	
Gender				59.8/0.00*
Male	46 (38.3)	71 (59.2)	03 (2.5)	
Female	136 (82.9)	27 (16.5)	01 (0.6)	
Exercise routine				4.77/0.31
No exercise	55 (72.4)	21 (27.6)	00 (0)	
Occasionally	75 (63.6)	41 (34.7)	02 (1.7)	
Daily	52 (57.8)	36 (40.0)	02 (2.2)	
Duration of sleep				8.19/0.08
<6 h	36 (62.1)	21 (36.2)	01 (1.7)	
6-8 h	16 (53.3)	12 (40.0)	02 (6.7)	
>8 h	130 (66.3)	65 (33.2)	01 (0.5)	
Eating habits				2.01/0.36
Vegetarian	74 (69.2)	32 (29.9)	01 (0.9)	
Non-vegetarian	108 (61.0)	66 (37.3)	03 (1.7)	
Meal regularity				2.40/0.66
Three meals regularly	119 (66.5)	58 (32.4)	02 (1.1)	
Skipping with substitute	50 (61)	30 (36.6)	02 (2.4)	
Skipping without substitute	13 (56.5)	10 (43.5)	00 (0)	

* Chi-square statistical analysis with significance at $P < 0.05$

In the present study 11 (3.9%) participants had reported a habit of smoking, while 23 (8.1%) were alcoholic. Few studies revealed ~ 58% of medical students had a habit of smoking which is consistent with the results of the current study.^[17,18] Some studies reported drinking alcohol among 6-10% of medical students which is similar to the present study.^[18,19] Whereas, various studies^[17,19-21] reported that there are more common practice of smoking and drinking among medical students. These findings could be explained by the fact that college students do not worry about their health status, think themselves relatively young and risk-free.^[17,19]

Further, findings of our study revealed that less than one third (31.7%) of students exercised daily and among the majority (85.1%) had considered walk as a main physical activity. Our findings indicated that a significant number of participants exercised less than 15 min per day. These findings were similar to previous studies, which reported lack of being physically active on a daily basis was more prevalent among study participants.^[14,21]

In the present study, 30.9% participants reported sleep deprivation and the reason for inadequate sleep were the use of mobile phone, media, and friends among 71.4% participants and for 42% participants reported that it was due to study and stress. These results are in line with other studies^[16,22,23], which reported the use of mobile and stress were the major factors for disturbed sleep pattern among budding health care professionals. Study shows that disturb sleep pattern may result in depression, anxiety, improper interpersonal relationship, poor academic performance, and more vulnerability to substance abuse.^[16,22] Therefore, reorganization, appropriate counseling, better planning, and support is needed and should be provided to students who are suffering from disturb sleep pattern.

Breakfast is generally considered the major meal of the day as it gives an energetic start and maintains energy level for body's function throughout the day. Present study reports impressive findings that majority of the participants (63%) were taking three meals per day and this is in line with a study carried out by Sharma *et al.*^[24]. Dinner and breakfast were considered as the main meal of the day by almost 74.6% which is similar to other study findings, where 68% respondents reported breakfast as their important meal.^[25] Current study result shows that 28.9% participants skipped their meal with substitute and out of them 70.7% participants take junk food and beverage as a substitute for their skipped meal. These finding are in resemblance with another similar study^[24] where 32.5% participants skipped their meal with substitute and majority of them preferred junk food and bakery items.

With regards to BMI, waist to hip ratio and blood pressure of study participants revealed that 12.7% and 12% of students were underweight and overweight, respectively, while 28.5% of students were in unacceptable range of WHR. Study findings are in line with studies carried out by Fernandez *et al.*^[15] which

shows 13.2% of participants were overweight, respectively, while 31.22% participants were having abnormal waist to hip ratio in a study.^[26] Surprisingly, more than one-third of the participants (36%) were found pre-hypertensive (34.5%) and hypertensive (1.5%). This was similar to study^[27] done where prevalence of pre-hypertension and hypertension were reported by 36% of college students.

Present study reported statistical significant association between biophysical profile of students, with selected demographic variables (gender and duration of sleep). These findings resemble to another studies which concluded that demographic characteristics have significant relationship with biophysical profile.^[15,24,26]

Lifestyle behaviors in adolescent or young adulthood may have an influence on diseases related to lifestyle in the future. The diseases among adults can be prevented from identifying the practices and rectifying them at an early stage. Increasing the awareness of healthy lifestyle behaviors to maintain normal biophysical profile among the college students is therefore essential and primary health care physicians play crucial role by becoming a role model and practicing healthy lifestyle before advising to others. This article will definitely provide an idea to primary health care physicians regarding unhealthy lifestyle practices among budding professionals in medical field and they can take innovative steps so that they refrain from unhealthy lifestyle and can become future ambassador for patients to adopt healthy lifestyle practices.

Conclusion

Present study findings show that budding health care professionals are into unhealthy lifestyle, where a significant number of professionals are practicing unhealthy dietary habits, sleep deprivation, and inadequate physical activity. Few of them also reported habits of alcohol use and smoking. Further, a significant number of participants are overweight, have unacceptable WHR, and either hypertensive/pre-hypertensive. Our results highlight the requirement of further research to explore the barriers and potential promoters to adopt healthy lifestyle behaviors at the medical universities. Moreover, it is needed to plan and implement health promotion programs to motivate budding healthcare professionals to engage in regular exercise, maintain normal weight, and practice healthy dietary pattern with the aim of health promotion and prevention of diseases at university level. Finally, coordinated efforts including the individual, social, and administration levels are required to create an environment where healthy lifestyle behavior flourishes and become a routine pattern.

Recommendations

On the basis of the findings of the study results, it can be recommended that plan and implement health promotion programs to motivate budding healthcare professionals to engage

in regular exercise, maintain normal weight, and practice healthy dietary patterns with the aim of promoting health and preventing further diseases. Further studies can be done to identify the barriers and potential promoters to adopt healthy lifestyle behaviors among budding healthcare professionals.

Limitations

The present study used cross-sectional design therefore; it did explain the causes of unhealthy practice among budding health professionals which constituted one limitation. There were other limitations that the majority of participants were females and may influence the biophysical profile of the sample. Furthermore, this is a single centric study and tool used was based on more subjective reports, inquiry questionnaires so some informational chunks given by participants might not show exact and true values of lifestyle behaviors.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Key Message: Participants who get into health sciences generally experience various problems due to change in environment, which may affect their lifestyle behavior and results in poor lifestyle habits and increases the proneness of serious diseases like obesity, diabetes, hypertension, cardiovascular diseases, and cancer in later life. This study concluded that participants are practicing unhealthy lifestyle which is a serious issue and need to be addressed.

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Conflicts of interest

There are no conflicts of interest.

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