



# Assessment of Food Habits, Health Status and Healthy Lifestyle Perceptions of University Sportsman in Bangladesh: A Cross Sectional Study



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## Abstract

This cross-sectional study involving 327 university sportsman aged 18-26 years was undertaken to evaluate the food habits, health conditions and healthy lifestyle perceptions of University Sportsman in Bangladesh. Majority of sportsman ate meals and breakfast regularly and preferred to take meat and fast food than fruits and vegetables. Males had a lower consumption of vegetables, fast food and meat whilst they had a higher intake of soft drinks, tea or coffee. Though females were more conscious about their balance nutrition and obesity, they were more anxious (OR = 1.35) but less depressed (OR = 0.83) as well as felt more physical health problems such as fever (OR = 3.83), respiratory (OR = 1.80) and GIT problems (OR = 1.73) than males. Overweight sportsman reported the highest consumption of fast food (73.17%), meat (80.49%) and soft drinks (82.93%) but the lowest consumption of vegetables (31.71%). Association between food habits and major health problems, such as depression, GIT problems and overweight were also observed. As the better dietary habit leads to the better health consequently better performance, it is very important to provide proper knowledge about nutritious foods and healthy lifestyle to the sportsman.

**Keywords:** Food habit; Health condition; Overweight; Depression; University sportsman; Bangladesh

## Introduction

Sports and recreation are very important in motor learning and social skills and in the development of creativity [1]. Sports such as basketball, tennis, racquetball, weight-lifting and swimming may also help the people to improve and maintain physical as well as mental health [2]. Playing sports can make a man healthier and happier because of the physical activity involved that can effectively contribute to the improvement of physical fitness [3,4]. Researchers noted the positive effects of physical activity on mental health, such as reduction of anxiety and depression levels [5].

Nutritious food habit is regarded as a balanced consumption of carbohydrates, lipids, proteins, vitamins, minerals and water which are essential nutrients to meet the energy needs for vital activities in our body. It also helps us to protect health, make physical growth and development possible [6]. But unhealthy dietary habits do not only affect the performance in the competition but also provides a negative impact on their overall health [7]. To avoid unhealthy food and select healthy food for consumption, nutrition knowledge is necessary [8]. On the other hand, entering university is an important time in the

life of an individual as this increases the responsibility for the selection of food and a healthy lifestyle [9].

Studies show that food habits and sport are very significant for a healthy life. Various factors such as person-based physiological and psychological factors, nutrition, health, environmental factors and sport-related characteristics play a role in obtaining high sports performance. On the contrary, it is difficult to mention which factor is more effective in maximum performance. However, there is no doubt that expecting high performance from a sportsman who does not eat regularly which is unhealthy is impossible [10,11]. Regular and balanced food habits are significant for sportsmen in many ways. Many situations such as increasing performance, controlling loss of weight and overweight gain, preventing discomfort given by electrolyte losses in the body, regular functioning of the digestive system, renewing energy sources in the recovery process which affect sportsmen directly or indirectly are provided with balanced nutrition [12]. But no such study found that ever conducted among Bangladeshi university sportsman to assess their food habits, health status and perception of their healthy lifestyle. Therefore, this study was undertaken to

fill up the gap. This may also help to assist Exercise and Sports science department to plan health programs or dietary courses in future to improve food habits and sports performances of athletes.

## Methods

### Study Design and Sampling

For this population based cross-sectional study, respondents were selected from six reputed public universities namely National University, University of Dhaka, Jangirnagar University, University of Chittagong, Noakhali Science and Technology University and Comill University during December 2017 to March 2018. A simple random sampling technique was used for the selection of study participants. The total participants were 327 aged 18-26 years including first to fourth year undergraduate students where 292 participants were male and 35 were female. The participants were selectively assigned to read about the topic. To reduce the risk of biasness, study participants were identified and listed with the help of student's ID card. Students having exercise or sports or both at least 20-30 minutes per day and 2-3 days per week during the last two months prior to the study started were selected. All the participants willingly joined in this study providing written consent. The study protocol was approved by the department of pharmacy of Noakhali Science and Technology University.

### Study Questionnaire

The questionnaire was adopted from formerly published studies [13,14] and some questions were modified and

developed by our research team. The questionnaire was divided into six portions including demographic information, sports and exercise, food habit, quality of life, healthy lifestyle and medication taking attitudes.

### Data collection

The procedure of data collection was segmented into three steps. The first step was to fill up the questionnaire including socio-demographic and anthropometric information by the study subjects. The second phase was to focus on group discussion about the study protocol and the final step was to cross-check interviews with the key informants. The questionnaires were distributed to selected students together with a written consent form that explained the purpose of the research with the assurance of their confidentiality. The students were told that their participation was anonymous and entirely voluntary and there was no reward for taking part. They were invited to complete the questionnaire. We were present on hand to answer questions or clarify any doubts that they might have. All filled questionnaires were collected by us one by one.

### Statistical analysis

All data obtained were entered into a Microsoft Office Excel 2010 spreadsheet and final analysis was done by using SPSS software version 20.0 (SPSS Inc., Chicago, IL., USA). The p values were calculated by chi-square test. An alpha level of 0.05 or less was considered as significant at 95% Confidence level. Microsoft Office Excel 2010 program was used for chart, graph, and diagram preparation.

**Table 1:** Socio-demographic profile of respondents.

Item	Sub-group	Number (n)	Percentag (%)
Gender	Female	35	10.70%
	Male	292	89.30%
Age	18-20 years	61	18.65%
	21-23 years	188	57.49%
	24-26 years	78	23.85%
Year of study	1st Year	71	21.71%
	2nd Year	82	25.08%
	3rd Year	98	29.97%
	Final Year	76	23.24%

## Results

### Socio-Demographic Profile

(Table 1) showed that 89.30% of the respondents were male while female comprised of 10.70% of respondents. The highest number of sportsmen were in the age group of 21-23 years with a percentage of 57.49%, while the lowest number of sportsmen were in the age group of 18-20 years with a percentage of 18.65%. Rest 23.85% of the sportsman were in

the age group of 24-26 years. Among the respondents, 21.71% sportsman were from the 1st year, 25.08% from the 2nd year, 29.97% from the 3rd year, and 23.24% of respondents were from the final year respectively.

### Food Habits

Food habits of the respondents were compared by gender presented in (Table 2). 91.45% of female athletes were reported to be eating meal regularly (OR = 1.04; CI = 0.34-3.18) compared

to 91.78% of male (OR = 1.00; CI = 0.87-1.14). Female students showed better eating habits in terms of breakfast (80.00%; OR = 0.77; CI = 0.35-1.70) and diner (85.71%; OR= 1.02; CI = 0.42-2.49) taking attitude in contrast to male students (75.00%; OR = 1.03; CI = 0.95-1.12 and 85.96%; OR = 1.00; CI = 0.90-1.11 respectively). The tabulated results showed that eating fast food, fish, meat and vegetables were more common among female (74.29%, 91.43%, 82.86% and 91.43% respectively) in comparison to male participants (39.04%, 81.16%, 76.71% and 84.56%). On the contrary, in case of fruits, soft drinks, tea

or coffee and traditional food the greater percentage of male (47.95%, 51.71%, 80.14% and 70.89% respectively) than female (45.71%, 48.57%, 65.71% and 65.71%) reported that they had those foods regularly. Whereas, smoking, narcotics and alcohol consumption rate were very rare among female students. Our study reported that among male students, 14.38% did smoke in contrast to only 4.79% were engaged in taking narcotics like products. Furthermore, only 1.71% male students were found to drink alcohol related drinks or beverages.

**Table 2:** Food habits of university sportsman.

Questions	Answer	Male		Odd Ratio (95% CI)	Female		Odd Ratio (95% CI)
		N	%		N	%	
Do you take meal regularly?	Yes	268	91.78	1	32	91.45	1.04
	No	24	8.22	(0.87-1.14)	3	8.55	(0.34-3.18)
Do you take breakfast regularly?	Yes	219	75	1.03	28	80	0.77
	No	73	25	(0.95-1.12)	7	20	(0.35-1.70)
Do you take dinner regularly?	Yes	251	85.96	1	30	85.71	1.02
	No	41	14.14	(0.90-1.11)	5	14.29	(0.42-2.49)
Do you take fast food?	Yes	114	39.04	1.17	26	74.29	0.26
	No	178	60.96	(1.07-1.27)	9	25.71	(0.13-0.54)
Do you take fish?	Yes	237	81.16	1.08	32	91.43	0.44
	No	55	18.84	(1.00-1.16)	3	8.57	(0.14-1.37)
Do you take fruits?	Yes	140	47.95	0.99	16	45.71	1.08
	No	152	52.05	(0.92-1.07)	19	54.29	(0.58-2.03)
Do you take meat?	Yes	224	76.71	1.04	29	82.86	0.71
	No	68	23.29	(0.96-1.13)	6	17.14	(0.31-1.64)
Do you take soft drinks regularly?	Yes	151	51.71	0.99	17	48.57	1.12
	No	141	48.29	(0.92-1.06)	18	51.43	(0.60-2.09)
Do you take tea/coffee regularly?	Yes	234	80.14	0.91	23	65.71	1.92
	No	58	19.86	(0.81-1.02)	12	34.29	(1.00-3.67)
Do you take traditional food regularly?	Yes	207	70.89	0.97	23	65.71	1.24
	No	85	29.11	(0.89-1.06)	12	34.29	(0.64-2.39)
Do you take vegetables regularly?	Yes	247	84.56	1.06	32	91.43	0.55
	No	45	15.44	(0.97-1.15)	3	8.57	(0.17-1.71)
	Yes	42	14.38	0.88	0	0	
Do you smoke regularly?	No	250	85.62	(0.84-0.92)	35	100	
	Yes	14	4.79	0.89	0	0	
Do you take any narcotics regularly?	No	278	95.21	(0.85-0.92)	35	100	
	Yes	5	1.71	0.89	0	0	
Do you take alcohol regularly?	No	287	98.29	(0.86-0.93)	35	100	

(Table 3) demonstrated the difference of frequency of taking food between male and female sportsman. Comparison of having fast food, tea or coffee and vegetables between genders were statistically significant (p = .000, p = 0.036

and p = .043 respectively). Females were more prone to take fast food than males, but males were more like to take tea or coffee. Our findings also reported that about 31.19% (42.85% female and 29.79% male) of the sportsman had fast food at

sometimes, while about 40.06% (22.85% female and 42.12% male) had it at a few times per week. The consumption rate of fruits at a few times or often was more among females than males (54.29% vs. 45.55% or 17.14% vs. 8.56% respectively). The greater percentage of female participants than male (37.14% vs 26.37%) took fish always while greater percentage of male than female (16.10% vs 14.29%) reported they liked to take meat always. On the other hand, the higher percentage of male participants than female (23.97% vs 20.00%) liked to take fish sometimes while larger percentage of female than

male (45.71% vs 34.25%) reported they wished to take meat sometimes in their daily life. Though the highest percentage of sportsman 39.76% (female 25.71% and male 41.44%) felt very happy to take tea or coffee always, the lowest number of respondents 7.03% (7.88% male but no percentage of female) liked to drink soft drinks always. The highest number of both males (34.93%) and females (42.86%) reported that they liked to take vegetables often and the lowest number of respondents (1.03% male but no percentage of female) reported they never take vegetables in their daily life.

**Table 3:** Frequency of taking daily foods.

Food list	Frequency	Male (%)	Female (%)	Total (%)	p value
How often do you eat fast food?	A few times	123 (42.12)	8 (22.85)	131 (40.06)	.000*
	Always	0 (0.00)	1 (2.86)	1 (0.31)	
	Never	55 (18.84)	1 (2.86)	56 (17.13)	
	Often	27 (9.25)	10 (28.57)	37 (11.31)	
	sometimes	87 (29.79)	15 (42.85)	102 (31.19)	
How often do you eat fish?	A few times	43 (14.73)	2 (5.71)	45 (13.76)	0.461
	Always	77 (26.37)	13 (37.14)	90 (27.52)	
	Never	12 (4.11)	1 (2.86)	13 (3.98)	
	Often	90 (30.82)	12 (34.29)	102 (31.19)	
	sometimes	70 (23.97)	7 (20.00)	77 (23.55)	
How often do you take fruits?	A few times	133 (45.55)	19 (54.29)	152 (46.48)	0.169
	Always	19 (6.51)	0 (0.00)	19 (5.81)	
	Never	33 (11.30)	2 (5.71)	35 (10.70)	
	Often	25 (8.56)	6 (17.14)	31 (9.48)	
	sometimes	82 (28.08)	8 (22.86)	90 (27.52)	
How often do you eat meat?	A few times	57 (19.52)	4 (11.43)	61 (18.65)	0.598
	Always	47 (16.10)	5 (14.29)	52 (15.90)	
	Never	11 (3.77)	2 (5.71)	13 (3.98)	
	Often	77 (26.37)	8 (22.86)	85 (25.99)	
	sometimes	100 (34.25)	16 (45.71)	116 (35.47)	
How often do you take soft drinks?	A few times	109 (37.33)	14 (40.00)	123 (37.61)	0.459
	Always	23 (7.88)	0 (0.00)	23 (7.03)	
	Never	32 (10.96)	4 (11.43)	36 (11.01)	
	Often	42 (14.38)	4 (11.43)	46 (14.07)	
	sometimes	86 (29.45)	13 (37.14)	99 (30.28)	
How often do you take tea or coffee?	A few times	33 (11.30)	5 (14.29)	38 (11.62)	.036*
	Always	121 (41.44)	9 (25.71)	130 (39.76)	
	Never	25 (8.56)	7 (20.00)	32 (9.79)	
	Often	71 (24.32)	5 (14.29)	76 (23.24)	
	sometimes	42 (14.38)	9 (25.71)	51 (15.60)	
How often do you take traditional food?	A few times	70 (23.97)	9 (25.71)	79 (24.12)	0.961
	Always	117 (40.07)	12 (34.29)	129 (39.45)	
	Never	25 (8.56)	4 (11.43)	29 (8.87)	
	Often	25 (8.56)	3 (8.57)	28 (8.56)	
	sometimes	55 (18.84)	7 (20.00)	62 (18.96)	

How often do you eat vegetables?	A few times	57 (19.52)	3 (8.57)	60 (18.35)	.043*
	Always	65 (22.26)	3 (8.57)	68 (20.80)	
	Never	3 (1.03)	0 (0.00)	3 (0.92)	
	Often	102 (34.93)	15 (42.86)	117 (35.78)	
	sometimes	65 (22.26)	14 (40.00)	79 (24.16)	

**Health Status**

The health status of respondents was illustrated by gender in (Table 4). Our study found that male lead a better life than female. Female were more anxious (42.86%; OR = 1.35; CI = 0.72-2.53) in contrast to male (34.93%; OR = 0.96; CI = 0.89-1.05) but less depressed than male athletes (34.29%; OR = 0.83; CI = 0.43-1.61 and 39.04%; OR = 1.02; CI = 0.95-1.10 respectively). Respiratory problems, GIT problems and fever were more common among female respondents than male (51.43%; OR = 1.80; CI = 0.97-3.36 vs 35.27%; OR = 0.93; CI = 0.85-1.01, 51.43%; OR = 1.73; CI = 0.93-3.24 vs 36.30%; OR = 0.93; CI = 0.86-1.01, 60.00%; OR = 3.83; CI = 2.04-7.21

vs 24.32%; OR = 0.82; CI = 0.73-0.92 respectively). Even more female participants (17.14%) rated their BMI level at overweight than male (11.99%). As a result, female faced more difficulty in their daily life than male (40.00%; OR = 1.47; CI = 0.78-2.77 vs 30.14%; OR = 0.95; CI = 0.87-1.04). Everyone may feel difficulty in their daily life due to several physical or mental problems (Figure 1). narrated the feeling of difficulty level of sportsman in their daily life due to having problems mentioned in (Table 4). Among all the sportsman who turned difficulty in daily life 29.05% (27.74% male and 40.00% female) of them faced somewhat difficult and 2.14% (2.40% male but no percentage in female) had very difficult but no cases rated extremely difficult.

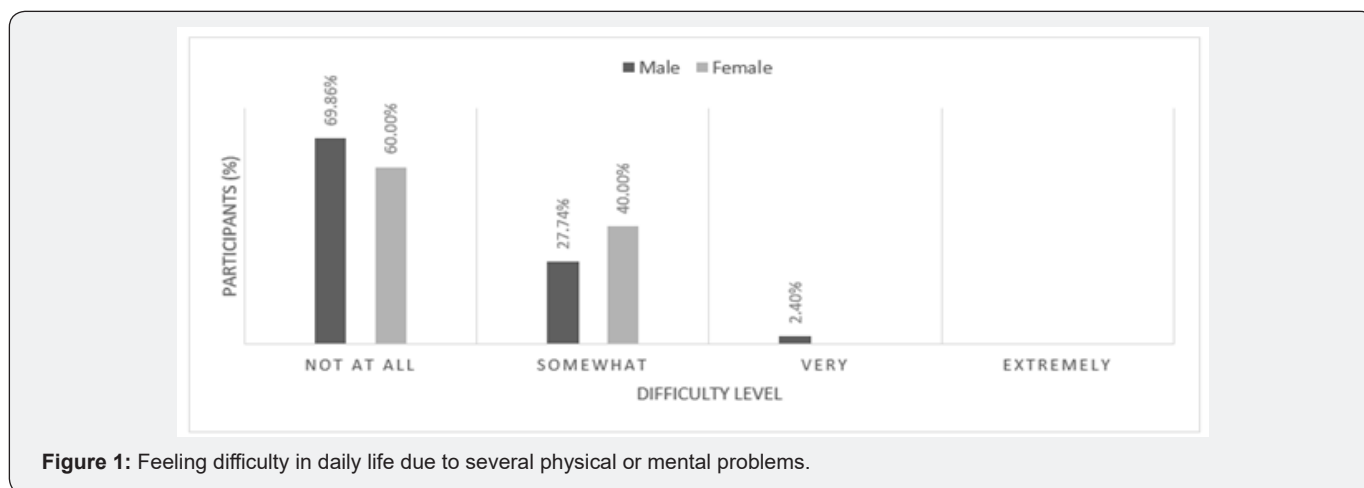


Figure 1: Feeling difficulty in daily life due to several physical or mental problems.

Table 4: Health status of university sportsman

Items	Answer	Male (%)	Odd Ratio (95% CI)	Female (%)	Odd Ratio (95% CI)	Total (%)	Odd Ratio (95% CI)
Anxiety	Yes	102 (34.93)	0.96	15 (42.86)	1.35	117 (35.78)	1.4
	No	190 (65.07)	(0.89-1.05)	20 (57.14)	(0.72-2.53)	210 (64.22)	(0.69-2.85)
Depression	Yes	114 (39.04)	1.02	12 (34.29)	0.83	126 (38.53)	0.82
	No	178 (60.96)	(0.95-1.10)	23 (65.71)	(0.43-1.61)	201 (61.47)	(0.39-1.70)
Respiratory problems	Yes	103 (35.27)	0.93	18 (51.43)	1.8	121 (37.00)	1.94
	No	189 (74.73)	(0.85-1.01)	17 (48.57)	(0.97-3.36)	206 (63.00)	(0.96-3.93)
GIT problems	Yes	106 (36.30)	0.93	18 (51.43)	1.73	124 (37.92)	1.86
	No	186 (63.70)	(0.86-1.01)	17 (48.57)	(0.93-3.24)	203 (62.08)	(0.92-3.76)
Headache	Yes	184 (63.01)	0.96	25 (71.43)	1.41	209 (63.91)	1.47
	No	108 (36.99)	(0.89-1.04)	10 (28.57)	(0.70-2.84)	118 (36.09)	(0.68-3.17)
Fever	Yes	71 (24.32)	0.82	21 (60.00)	3.83	92 (28.13)	4.67

	No	221 (75.68)	(0.73-0.92)	14 (40.00)	(2.04-7.21)	235 (71.87)	(2.26-9.66)
Overweight	No	257 (88.01)	0.95	29 (82.86)	1.44	286 (87.46)	1.52
	Yes	35 (11.99)	(0.83-1.09)	6 (17.14)	(.64-3.26)	41 (12.54)	(.59-3.92)
Difficulty in daily life	Yes	88 (30.14)	0.95	14 (40.00)	1.47	102 (31.19)	1.55
	No	204 (69.86)	(0.87-1.04)	21 (60.00)	(0.78-2.77)	225 (68.81)	(0.75-3.18)

### Food Habits verses Major Health Problems

(Table 5) demonstrated the association of occurring depression, GIT problems and Abnormal BMI with major food habits, such as fast food, fish, meat, soft drinks and vegetables. Our study found that higher percentage of fast food, meat and soft drinks lover rated in all mentioned problems. Respondents with abnormal BMI reported the highest percentage in taking soft drinks (82.93%). A huge percentage, the greater percentage among all groups, of sportsman with abnormal BMI was also very fond of taking fast food (73.17%) and meat (80.49%).

Consumption of fast food and meat were very common among depressed respondents (55.56% and 63.49% respectively) as well as respondents facing GIT problems (54.84% and 68.55%). But very lower consumption rate of vegetables was observed among all depressed (41.27%), GIT problems (36.29%) and abnormal BMI (31.71%) participants. So, by going through the tabulated percentage, it is clear that higher consumption of fast food, meat and soft drinks were mainly associated with abnormal BMI problems. Lower vegetables consumption rate might also be responsible for GIT problems.

**Table 5:** Frequency of depression, GIT problems and abnormal BMI with major food habits.

Food items (regularly)	Response	Depression (n = 126)		aGIT problems (n = 124)		Abnormal bBMI (n = 41)	
		n	%	n	%	n	%
Fast food	Yes	70	55.56	68	54.84	30	73.17
	No	56	44.44	56	45.16	11	26.83
Fish	Yes	80	63.49	79	63.71	22	53.66
	No	46	36.51	45	36.29	19	46.34
Meat	Yes	80	63.49	85	68.55	33	80.49
	No	46	36.51	39	31.45	8	19.51
Soft drinks	Yes	85	67.46	65	52.42	34	82.93
	No	41	32.54	59	47.58	7	17.07
Vegetables	Yes	52	41.27	45	36.29	13	31.71
	No	74	58.73	79	63.71	28	68.29

**Table 6:** Healthy lifestyle perception of respondents by gender.

Parameter	Answer	Male		Female		Total		Chi-square (d.f) p value
		n	%	n	%	n	%	
Do you follow balanced nutrition?	Yes	238	81.51	33	94.29	271	82.87	3.6 (1) .058
	No	54	18.49	2	5.71	56	17.13	
Do you prefer to get rid of fat?	Yes	225	77.05	28	80	253	77.37	0.35 (1) .694
	No	67	22.95	7	20	74	22.63	
Are you conscious about your obesity?	Yes	232	79.45	30	85.71	262	80.12	0.77 (1) .380
	No	60	20.55	5	14.29	65	19.88	
How many days do you participate in sports or exercise per week?	Almost daily	85	29.11	13	37.14	98	29.97	1 (2) .607
	4-5 days	127	43.49	13	37.14	140	42.81	
	2-3 days	80	27.4	9	25.71	89	27.21	
How many hours do you sleep per day?	<7.0 hours	40	13.7	3	8.57	43	13.15	1.4 (2) .498

	≥ 7.0 to ≤ 8.0 hours	247	84.59	32	91.43	279	85.32	
	>8.0 Hours	5	1.71	0	0	5	1.53	

### Healthy Lifestyle Perceptions

Sportsman’s perception about healthy lifestyle is tabulated in (Table 6). The perception about healthy lifestyle was almost similar between male and female. The study results revealed that there is no significant difference in perception between male and female students about a balanced nutrition ( $\chi^2 = 3.6, p = .058$ ). Similar type of non-significant result was also observed for the answers regarding to get rid of fat ( $\chi^2 = 0.35, p = .694$ ), consciousness level about obesity ( $\chi^2 = 0.77, p = .380$ ), the days of taking part in sports per week ( $\chi^2 = 1.00, p = .607$ ) and hours of sleeping per day ( $\chi^2 = 1.4, p = .498$ ).

### Discussion

Students generally prefer fast food and ready food items in different restaurants due to its deliciousness, accessibility and expediency. In view of eating habits, Glore SR et al. conducted a study among university students that found student’s diet was high in fat but low in fruits as well as vegetables [15] and the present study reported the similar result in case of university sportsmen. In the current study, the obtained data of dietary habits revealed that the majority of players ate meals regularly and breakfast daily. The percentage of taking daily breakfast was higher in the female athletes compared to male. Previous studies also found almost same findings among general students. Studies conducted among university students in Lebanon [16] reported that majority of the students (61.4%) ate regular meals. Another study undertaken among college athletes of USA [17] also found that females practiced better dietary habits than males that supported the findings of our present study. Alcohol consumption and smoking might be rare in female sportsmen, but males were familiar with these habits. Our study found a greater percentage of smoker than the findings (2.5%) of a study conducted among 2443 students from 13 public and private schools in Lebanon [18].

Exercise and sports reduce anxiety, depression, obesity and number of sick days by improving immune system [19]. Arya G et al., Armstrong S et al. and Craft LL et al. found that athletes have been shown to have decreased levels of social anxiety and depressive symptoms that was appreciated by our present study [20-22]. Athletic participation on an intercollegiate sports team is directly related to lower levels of depression [23]. The level of attacking anxiety and depression might be difference between male and female. A study was conveyed in 1999 demonstrated significant higher anxiety and depression scores for female compared to male adolescents [24]. Our study supported their findings in case of anxiety but went to opposite in case of depression where our study showed that males felt more depression than females. Another study in 2006 observed higher anxiety scores for females

but no sex differences in depression scores but present study reported sex differences in depression [25]. In addition, Chan YF et al. reported significantly higher anxiety scores for female compared to male but higher depression scores for male compared to female was observed in Hong Kong [26]. These were of interest for results of the present study, although not significant similar results were found.

Our study reported more than 6% of sportsmen were underweight and around 1% obese that was almost similar to another study conducted in Greece, Serbia and Turkey among athletes and other groups [27]. But the present study had the larger overweight respondents compare to 20.4% overweight which was found by Nudri WD et al. [28] The prevalence of overweight among female players were also lower than previous findings in adult volleyball players (12.3%) [29]. Previous study also reported athletes had the least physical problems which were similar to the results of the present study. Participation on sports activities caused less respiratory, cardiovascular or others physical illness [30].

### Conclusion and Recommendations

To conclude, majority of students eat meals regularly and breakfast daily. They prefer to take meat and fast food than fruits, vegetables. In comparison to females, male participants had significantly lower consumption of vegetables, fast food and meat whilst they had a higher intake of soft drinks, tea or coffee and traditional food. Though Females were more conscious about their balance nutrition and obesity, their quality of life was not as good as male. But the overall health status of athlete was good. Our study recommends that education about nutrition is a key factor for athletes and it needs to play a continual role in their lives. Therefore, proper nutrition knowledge can lead to healthier lifestyles. Coaches, parents, and athletic trainers need to have knowledge about nutrition because athletes tend to ask people to whom they are most comfortable with. Professionals can help athletes recognize the role of nutrition in sports and help them choose the most appropriate foods and fluids to attain peak performance and improve health status.

### Limitations

The study had some limitations as we faced some complications during the survey. Firstly, we had covered only six universities due to the shortage of time for the research work. So, the represented data does not give the whole scenario of all the athlete students of the country. If we had conducted the study in more universities, we would have got a more extensive scenario on the assessment of dietary habits, health status and healthy lifestyle perceptions. Secondly, students

were less familiar with some terminologies and complications arose regarding understanding the questionnaire. They needed further explanation. Thirdly, all universities were far away due to which it was a little bit difficult to travel these long distances. Fourthly, many students were busy with their examinations and lab work. So, collecting data from them was slightly difficult. It was also difficult to find out female athletes due to females having less eagerness to participate in sports or exercise. Finally, social desirability bias may have impacted the responses since the interviews were done in person.

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### Competing interest

The authors declare that they have no competing interests.

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