

# The Relationship between Lifestyle, General Health & Academic Scores of Nursing Students

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**Abstract** Background : Unhealthy behaviors and educational challenges may influence each other, or have common root causes. Health is an excellent indicator for the academic success of students that is an excellent indicator for the overall wellbeing of youth. Design: cross-sectional study. Aims: were to assess healthy & unhealthy habits among the nursing students, assess the impact of unhealthy habits on student general health & assess the impact of student general health on their academic scores. Tools: A designed questionnaire as well as anthropometric measurement was used to collect data. The results of the study revealed to The majority of participants were taking drugs without prescribed , didn't practice exercise & medical checkup, & eat more spicy diet. The major health problems were abdominal, pain, menstrual pain fell of tiredness & headache. In conclusion, the findings from this study revealed to: there were a positive relationship between health status, health habits, and academic score & unhealthy lifestyle behaviors' have impacts in students health & academic score. Recommendation : Universities need to pay attention to students health and wellbeing & a national program must be conduct to all students for improve healthy lifestyle awareness regarding healthy diet, importance of exercise, and periodic medical checkup, as well as personnel hygiene and avoiding drugs abuse & its impacts in general health and success .

**Keywords** Lifestyle, Healthy and Unhealthy Lifestyle General Health, University Students, Student Achievement

## 1. Introduction

Lifestyle defined as it is a way of life or style of living that reflects the attitudes and values of a person or group.[1&2] . A healthy lifestyle leaves you fit, energetic and at reduced risk for disease, based on the choices you make about your daily habits. Good nutrition, daily exercise and adequate sleep are the foundations for continuing good health.[3& 4].

A healthy lifestyle includes healthy habits. This means protecting your skin from the sun, practicing safe sex, getting regular health check-ups and avoiding substance abuse. Otherwise, healthy lifestyle habits include getting enough sleep, avoiding work place accidents, and good oral hygiene . Moreover, a healthy lifestyle is made up of a healthy balanced diet, regular exercise, good work-life balance and sleep with the absence of harmful drugs, alcohol, tobacco, illness and stress.[5&6] . The word 'healthy' has several distinct senses or meanings: 1: having or indicating good health in body or mind; free from infirmity or disease; 2: exercising or showing good judgment, eating a variety of foods[7].

Research shows that students have the best chance to succeed when they are healthy. "Health" in this context

includes a nutritious diet, physical activity, emotional well-being, safety and a sense of security, absence of chronic conditions such as asthma or diabetes, and access to physical/mental health services. In the long run, unhealthy behavior interferes with a student's education and an individual's quality of life[8]. Health & wellbeing wellbeing have direct impact on success rates, attendance & academic performance.[9]. Previous studies clearly indicate that premature morbidity and mortality are primarily the result of unhealthy lifestyle behaviors[10, 11&12]. These studies focus to a large extent on lifestyle behaviors such as tobacco use[12], physical inactivity[13; 14; 15; 12], unhealthy diet[12,13, 14& 15] and use of alcohol[15; 16].

Despite the fact that benefits of modifying lifestyle are increasingly demonstrated in clinical and general populations, assessment of lifestyle and therapeutic lifestyle changes is neglected in practice behaviors relevant to health include physical activities, diet, sleeping, smoking, drinking and drug consumption[17].

The high prevalence of sedentary behaviors, physical inactivity and unhealthy dietary habits among Saudi adolescents is a major public health concern, there is an urgent need for national policy promoting active living and healthy eating while reducing sedentary behaviors among Saudi children and adolescents[18].

Consumption of alcohol or other addictive substances is considered as "illegal" in Saudi Arabia, as the law is based on Islamic Sharia rules, which forbid consumption of any

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amount of alcohol and other forms of substances. Therefore, for religious and legal reasons, any use of alcohol is considered as abuse by Saudi general public[16].

Drug abuse negatively impacts education in several ways: 1-Impaired Short Term Memory, even students who use marijuana, which is considered a mild drug, is doing those selves a disservice. Marijuana limits the brain's ability to retain information. 2-Inability to Focus, drug abusers find it difficult to focus, particularly on tasks that require mental effort. A lack of focus generally leads to poor performance on schoolwork. 3-Vicious Cycle, the United Nations International Drug Control Program suggests that when students' educational performance goes down, their self-esteem suffers. This can cause a cycle of even lower academic performance and lower self-esteem that often drives students toward further drug use[19].

Studies have also shown that university students suffer from eating disorders and skipping meals is a common habit. Eating habits affect the academic performance of students because study schedules or workload keep varying within and between semesters[20; &21]. Healthy diets help students focus longer, assist in brain development, and help instill an anxiety-free attitude to enhance learning[22].

Research shows students learn better when they're well nourished. Healthy eating has been linked to higher grades, better memory, more alertness, faster information processing and improved health leading to better school attendance. Conversely, unhealthy eating habits can negatively affect learning. Without proper nutrition and adequate calories, students often don't have enough energy to power the brain, resulting in fatigue and learning problems. Measurement of lifestyle behaviors is necessary for the identification of causal associations between unhealthy lifestyle and health outcomes. However, despite considerable evidence for the importance of the assessment of lifestyle and therapeutic lifestyle changes in both clinical and normal populations, it still is underutilized[23].

Optimal sleep is an essential component of healthy lifestyle. In general, college students do not get the required 9 hours of sleep for optimal alertness[24]. The students who engaged in moderate physical activity were found to have higher grade point average[25]. However students who exercised for an average of seven or more hours a week showed signs of addiction towards exercise and had relatively lower grades[26].

It has been argued that health is an important factor for academic achievement in higher education[27]. Promoting the health and well-being of all members means promoting effective learning[28]. It is widely accepted that health and well-being are essential elements for effective learning[29]. Education is a strong predictor of lifelong health and quality of life in different populations, settings, and time[30].

Many factors are associated with academic outcomes[31]. Adolescents who use alcohol, tobacco or other drugs achieved lower grades, had more negative attitudes toward school, and exhibited increased absenteeism[32]. Furthermore, exercise seems associated with improved

academic outcomes[33], and malnutrition additionally plays an important role in academic performance[34].

Health and education may interact in three not mutually exclusive ways: 1) education may determine health; 2) one or more other factors may determine both health and education simultaneously; and 3) health may determine education[35].

Education and health are linked; unhealthy behaviors and educational challenges may influence each other. Health is an excellent indicator for the academic success of students. Enhancing student wellbeing and its pathways can increase academic achievement. The four main mechanisms by which the enhancement of student wellbeing and its pathways can indirectly improve academic achievement are: By increasing student motivation to participate and achieve; By increasing student engagement with, and participation in, learning; By increasing student attendance and hence increasing school completion; and By decreasing problem behavior at school and hence decreasing levels of suspension and exclusion from school[36].

The majority of university students are aged between 18 and 21 when entering university, a transition age to adulthood which is a time characterized by dramatic changes in life. During university time they consequently adopt new health behaviors and there may be a risk that they continue with unhealthy lifestyle choices that were established during their university years, which makes them a risk group not only during these years but for the rest of their lives.[37].

A college student's life contains many important factors that may hinder or improve it. These factors include student's living situation, health and of course academic performance. Academic achievement is extremely important for college students, as it is a main determinant of their future[38]. There is no study has yet been published on e.g., nursing students' health promoting lifestyle profiles, particularly examining their relationship with academic performance and nursing courses[39].

## 2. Subjects and Methods

### 2.1. Research Objectives

- 1- Assess the impact of unhealthy habits on student general health
- 2-Assess healthy & unhealthy habits among the nursing students
- 3- Assess the impact of student general health on their academic scores

### 2.2. Methods

#### 2.2.1. Design

A cross-sectional design was conducted to fulfill the goals of study

#### 2.2.2. Sitting and Subjects

One hundred & fifty undergraduate students from Applied Medical Science Collage, King Khalid University were participating in the study. The participants were eighteen years of age and older

### 2.2.3. Tool of the Study

A self-administered questionnaire sheet was developed by the researcher after reviewing related literature [40-47] in Arabic and distributed between students. Questionnaire sheet consists of 57 questions. The types of questions include multiple choices, and true & false questions & it included 4 sections.

The first one was regarding student & their family demographic characteristics (Q1–Q7) e.g. age, marital state, academic scores gained in next semester, family number, & income & history for chronic illness. The second one covers student's lifestyle (Q8-Q48), which includes alcohol & tobacco use, drug history, nutritional habits, sleep & exercise, & personal hygiene. The third one covered general health condition (Q49) includes 63 sub-questions covering major signs & symptoms of body system health problems. The fourth one covered Anthropometric measures (Q50-Q57) e.g. height, weight, body mass index, pulse, blood pressure, oxygen saturation, fasting blood sugar & hemoglobin.

The coded data were input on Excel spreadsheets and converted to SPSS for statistical analysis. Responses are coded as "yes = 1" and "no = 0," which yields a score range of 0 to 24, the negative impact questions were revised its score. For multiple question scores range from 1- 5 (39 questions).

### 2.2.4. Implementation Strategy

#### 2.2.4.1. Preparation for the Work

A review of past and current literature was done, official permissions were obtained from the Dean of college. Pilot study was carried up on 5 students after the development of tools and before data collection. All needed equipment were bought and agreement from hospital to send blood sample in specific time was obtained. Researchers went to classes and students classified to 6 groups according to their academic schedule and informing each group for time of attendance to be sharing in the research.

#### 2.2.4.2. Data Collection Procedures

The data collection began in November 2011 till the end of January 2012. The data was collected from students during work hours of the college; all students were asked to answer each question at the same time with a pause between the questions to maintain uniformity of instructions or response to queries on any particular question. This also helped to minimize non-response on questions. The length of time needed for completing the questionnaire was ranged from hour to half past hour

When participants arrived for the setting, they were seated with sufficient space between each person and informed

about the nature, purpose, and benefits of the study, her participation is voluntary, also provided with basic instructions on how to complete the questionnaire. Participants are asked to respond to each question according to their typical performance during the past 3 months, after completed questionnaire, give it for researchers and she becomes ready to take her anthropometric measures including height, weight, pulse, blood pressure, oxygen saturation, blood glucose test and taking blood sample for hemoglobin analysis. The academic score for each student was printed to ensure its validity.

Body mass index (BMI) was retrieved by using a formula dividing the individual's body weight in kilograms by the square of their height. An index <20 is classified as underweight, 20-25 is rated normal or optimal weight and an index >25 is considered overweight.

Pulse, O<sub>2</sub> saturation & blood pressure were measured by using electronic vital signs machine as well as measured blood sugars by using electronic glucose test apparatus. Hemoglobin level was tested by taking 2cc blood sample from each student & sends for private laboratory investigation to test (Hammad hospital), due to the apparatus of Hemoglobin was too expensive to buy it.

Plasma glucose level classified according to American diabetic association to normal who had Fasting plasma glucose of 70-110 mg/dl, prediabetic that who had fasting plasma glucose 111-125 mg/dl & diabetic who had fasting plasma glucose >126 mg/dl.

According to result of hemoglobin test, participants were classified to mild, moderate or severe anemic according to WHO. Mild anemia corresponds to a level of hemoglobin concentration of 10.0-10.9 g/dl; moderate anemia corresponds to a level of 7.0-9.9 g/dl, while severe anemia corresponds to a level less than 7.0 g/dl. O<sub>2</sub> saturation: measure of amount of O<sub>2</sub> bound to Hg are assessed by pulse oximeter (SpO<sub>2</sub>) its normal is >95% on room air.

The American Heart Association identifies the following categories in persons not receiving antihypertensive medications: Normal 120/80, High normal (pre hypertension) 120-139/80-89, Stage I HTN 140-159/90-99 & Stage II HTN 160/100 [48].

### 2.2.5. Ethical Considerations

The Ethics and Research Committee in KKU was approved the study protocol. Confidentiality of the subjects were also assured through coding of all data. The researcher assured that the data collected and information will be confidential and would be used only to improve their health and for the purpose of the study.

### Statistical Analysis

The statistical analysis of data done by using Excel program for figures and SPSS (SPSS, Inc, Chicago, IL) program statistical package for social science version 16. The description of the data done in form of mean (+/-) SD for quantitative data, Frequency & proportion for Qualitative data. The analysis of the data was done to test statistical significant difference between groups. Chi-Square test was

used to compare qualitative data.

Spearman correlation test was used to test association between variables

N.B: P is significant if  $< \text{ or } = 0.05$  at confidence interval 95%.

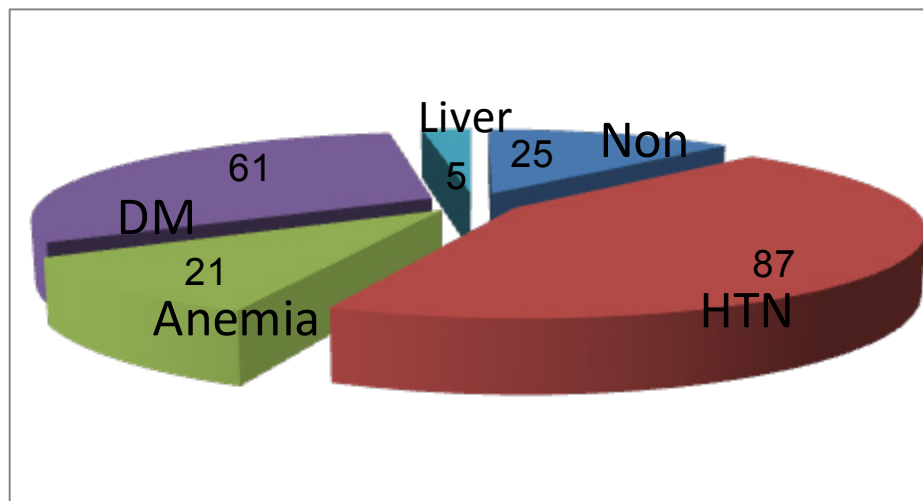
### 3. Result

The majority of participants were aged 20years old, virgin (92% & 93.4% respectively). About three quarter their Academic score were ranged between 2.5to 4,(74.7%).

Among participants weight, 70.7% had change in their weight in past 6 months, 62.3% out of them had increased in weight & only 17.3% taken some things to decrease her weight. On the other hand, 70.7% think that had an ideal weight. Also table indicates to majority of participants had family history to health problems, & & more than half had family smoking history & had sufficient family income (83.3, 52.7, & 52.7% respectively). Table(1). The major health problems as reported by participants were hypertension followed by diabetes & anemia ( fig.1).

**Table 1.** Demographic characteristics' of participants (N=150)

Items	No	%
Age		
1.18-20	12	8
2.>20	138	92
Marital state		
1.married	5	3.3
2. never married	140	93.4
3.divorce	5	3.3
Family health problems		
1.yes	125	83.3
2.no	25	16.7
Family income		
1. in sufficient	19	12.7
2. sufficient	79	52.7
3. sufficient& more	25	34.6
Academic score		
1.<2.5	24	16
2.2.5-4	112	74.7
3.>4	14	9.3
family smokers		
1.yes	79	52.7
2.no	71	47.3
Wt. change past 6 month		
1.yes	106	70.7
2.no	39	26
3.didn't know	5	3.3
Wt changes was		
1. Increase	66	62.2
2. decrease	40	58.7
Are taken some thing to inc\ de. your Wt		
1. Yes	26	17.3
2.no	124	82.7
If yes, What you taken		
1.dietary program	20	13.3
2. herbs	6	4
3.nothing	124	82.7



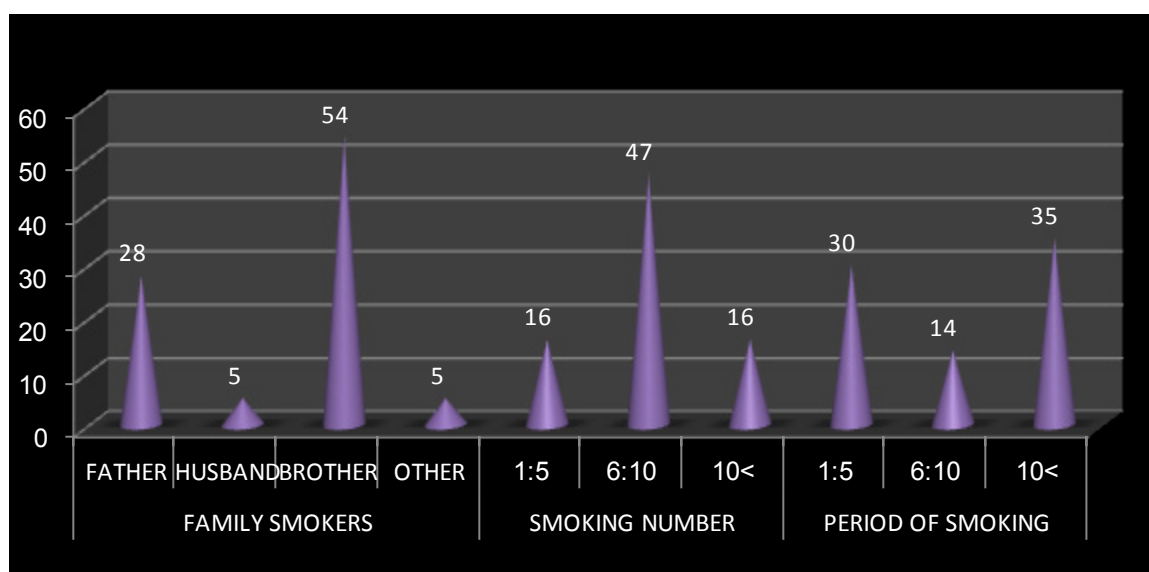
**Figure 1.** Percentage Distribution of family history to chronic illness

60% of participants hadn't feels hunger past 6 months, nearly tow third had taken meals at their house(64%) , while only 58.7% were maintained on taking healthy foods & all participants were used plenty oil & majority of them were taken snack between meals , (94%) represent in chips, juice, biscuit & hazels (59.3%, 39.3%, 20.7%, 16% respect.),they taken for 1-2 time\day(39.3% ) , 3-5time\day (31.3% ) & more than 5time\day( 23.3%).More ever, 62% hadn't source of drinking water at home, majority of hadn't source of drinking water at home were used bottles (93.5%) & nearly half of participant were drinking 4-6 moderate coup of water per 24 hours(47.3%) (Table,2 & figure 4).

Regarding to participants sleeping & exercise, there were only 22.7% practice exercise regularly, 61.7% out of them were practice walking exercise for tree time per week for more than one hour per time .70.7% didn't practice exercise due to hadn't time while , majority were wanting in sharing in exercise program(84%). Regarding sleeping , as reported by participants , more than half were slept for 4-8 hour per day (54%), the same proportion had interrupted sleeping, more than tow third had difficult to get sleeping(68.7%) & majority needs day sleeping , didn't taking alert or sleeping drugs(82.7, 78.7,&84.7% respectively) Table (3).

**Table 2.** Assessment of participants dietary Habits (No =150)

Items	No	%
Fells hunger due to insufficient diet at house in past 6m.		
1. never	91	60
2. 1-5	12	8
3. 6-10	13	8.7
4. >10	14	9.3
Taking meals at home		
1. yes	96	64
2. no	54	36
If No why		
1. lam outside	75	50
2. better outside diet	4	2.7
3. for change	17	11.3
Maintain taking healthy food		
1. yes	88	58.7
2. no	62	42.3
Oil used at home		
1. plant i	150	100
2. butter	0	0
Takes snake between meals		
1. yes	141	94
2. no	9	6
Have healthy water source at home		
1. yes	57	38
2. no	93	62
If no , source of drinking water at home		
1. bottles	78	93.5
2. filter	15	16.5
Cups of water drinking \ day		
1.1-3	50	33.3
2.4.6	71	47.3
3.>6	29	19.4



**Figure 2.** Percentage Distribution of family smoking history

**Table 3.** Assessment of participants sleep & exercise ( No 150)

Items		No	%	
- Practice exercise regularly	1.yes	34	<b>22.7</b>	
	2.no	116	77.3	
- If not , why	1- Don't like	25	21.5	
	2- No time	82	<b>70.7</b>	
	3- Weak health	9	7.8	
If yes,	1- types of exercise	1 - walking	21	<b>61.7</b>
		2 - volley \ basket	13	38.3
	2- frequency\w	1- onetime	8	23.5
		2- towtime	9	26.5
		3- three time	17	<b>50</b>
	3- time spent	1 - 30 min	11	32.3
		2 - 31-60 min	6	17.7
		3 - >60 min	17	<b>50</b>
- Want to participate in exercise program	1 - yes	126	<b>84</b>	
	2 - no	24	16	
- Sleeping hours \ day	1- < 4h	23	15.3	
	2- 4-8h	81	<b>54</b>	
	3- >8h	46	30.7	
- Quality of sleeping	1 - calm	69	46	
	2 - interrupted	81	<b>54</b>	
- Difficulty to get in sleeping	1- never	13	8.7	
	2- sometime	103	<b>68.7</b>	
	3- usually	34	22.6	
- difficulty to awaking	1- never	47	31.3	
	2- sometime	80	<b>53.3</b>	
	3- usually	23	15.4	
- needs day sleeping	1. yes	124	<b>82.7</b>	
	2. no	26	17.3	
- taking alert drug	1. yes	32	21.3	
	2. no	118	<b>78.7</b>	
- Hours of sleeping at night	1 - 10-11	36	24	
	2 - >11-12	45	30	
	3- >11-1	49	<b>32.7</b>	
	4- >1	20	13.3	
- taking sleeping drugs	1. yes	23	15.3	
	2. no	127	<b>84.7</b>	

**Table 4.** Assessment of participants personnel hygiene (No =150)

Items		No	%
No of bath \ w	1 - one	26	17.3
	2 - tow	68	45.3
	3 - three	56	37.4
Periodic checkup	1. yes	0	0
	2. no	150	100
If no, why	1- haven't problems	94	62.7
	2-haven't time	20	13.3
	3- not important	24	16
	4- expensive	12	8
Hand washing	1-before meals	140	93.3
	2- after meals	150	100
	3- before toilet	81	54
	4- after toilet	150	100
Brushing teeth	1 - yes	150	100
No of brushing teeth last week	1- 1-3	27	18
	2- 4-6	14	9.3
	3- daily	109	72.7
Brushing teeth after meals	1- yes	31	20.7
	2- no	119	70.3
General health is	1- poor	14	9.3
	2- moderate	38	25.3
	3- good	84	56
	4-perfect	14	9.4

**Table 5.** Correlation of Participants' Academic scores & Selected Demographic Characteristics

Demographic Characteristics		Academic scores				Chi-Square P value
		<2.5	2.5-4	>4	total	
Age	18-20y	6	6	0	12	.003*
	>20y	18	106	14	138	
Family health problem	Yes	19	92	14	125	.200
	No	5	20	0	25	
Family income	Un sufficient	0	19	0	19	.013*
	Sufficient	19	51	9	79	
	Sufficient & safe	5	42	5	52	
Family smoking	Yes	14	62	2	78	.000*
	No	10	50	12	72	
General health	poor	0	14	0	14	.003*
	Moderate	5	9	0	14	
	Good	5	33	0	38	
	Perfect	14	56	14	84	
Educational satisfaction	Yes	20	64	9	93	.055
	No	4	48	5	57	
Weight changes	Yes	15	82	9	106	.000*
	No	9	30	0	39	
	Didn't Know	0	0	5	5	

\*Significant

**Table 6.** Correlation of Participants' Academic scores & Major Habits

Life style habits		Academic scores				Chi-Square P value
		<2	2.5-4	>4	total	
Used drugs Without order	-Yes	24	79	0	103	.000*
	-No	0	33	14	47	
Taken meals at house	-Yes	13	73	10	96	.494
	-No	11	39	4	54	
Taken snakes	-Yes	24	103	14	141	.197
	-No	0	9	0	9	
Practice exercise	-Yes	0	34	0	34	.001*
	-No	24	78	14	116	
Sleeping hours\ d	1- < 4h	0	19	4	23	.036*
	2- 4-8h	19	57	5	81	
	3- >8h	5	36	5	46	
Sleep Quality	- Quite	6	54	15	69	.002*
	- Interrupted	18	58	5	81	

\*Significant

Among participants personal hygiene & general health, 45.3% had taken bath twice/week, 37.4 had taken bath three/week. All participants hadn't applied periodic checkup (100%), 62.75 hadn't applied periodic checkup because hadn't health problems. Also, all participants were washing hands before handling meals & after using toilet, & brush her teeth (100%), 72.7 out of them brush teeth three time per week. More than half view their health were good followed by quarter view their health were moderate (56, 25.3% respectively) (table 4).

There were a significant relationship between participants academic score & selected demographic characteristics among family income, smoker, participant age, general health, & weight changes (P value < 0.05) (table 5).

There were a significant relationship between participants academic scores & major Habits regarding drugs used past 6 months, practice exercise, sleeping hours & quality of sleeping (P value < 0.05) (table 6).

There were a significant relationship between participants academic scores & meals habits among place of breakfast, time & place of both lunch & dinner (P value < 0.05) (table 7).

There were a significant relationship between participants academic scores & nutrients' Intakes past month regarding frequently taking meat, poultry, milk, eggs, fish, bean, vegetables, fruit, candy, salty & spicy diet, tea, coffee, soft drinking. Fresh juice & starchy diet (P value < 0.05) (table 8).

There were a significant relationship between participants academic scores & major health Problems & Anthropometric Measurements regarding who suffer from fainting, general weakness, Loss of appetite, abdominal pain, nausea, irregular menses, in concentration, tiredness, depression, joint pain, & all Anthropometric Measurements of BMI, Bp, B.G., & Hg. (P value < 0.05) (table 9). There were a significant relationship between participants Anthropometric Measurements & their nutrients intakes (table 10).

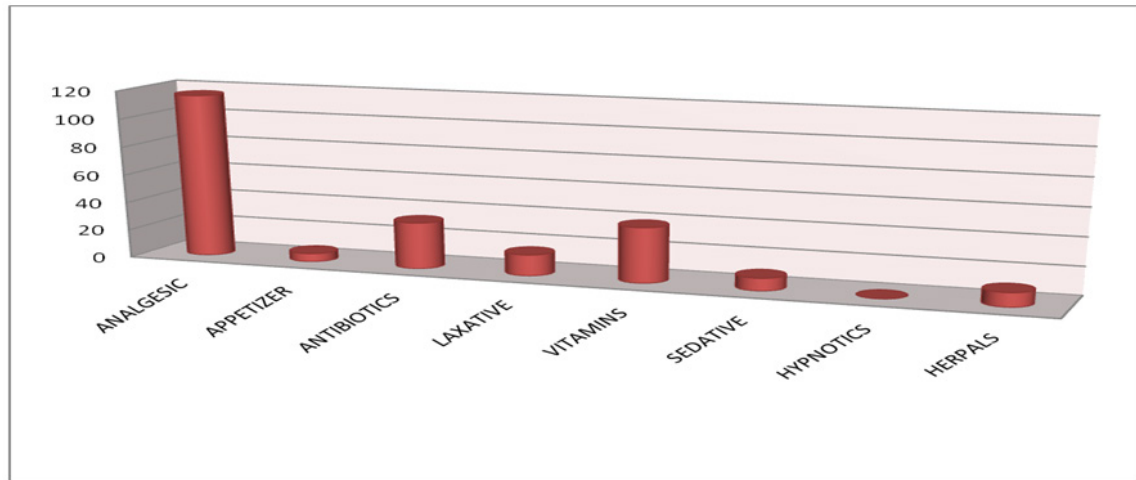


Figure 3. Percentage Distribution of participants to common drugs taken

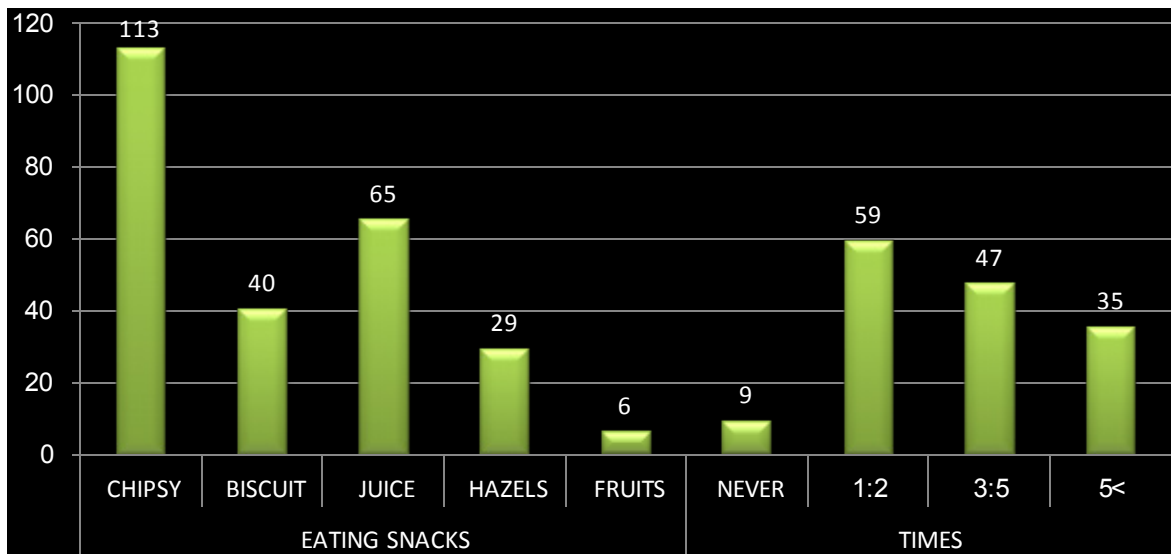


Figure 4. Percentage Distribution of participants to common snacks taken

Table 7. Correlation of Participants' Academic scores & Meals Habits

Meals		Academic scores				Chi-Square P value
		<2.5	2.5-4	>4	total	
Breakfast	Time 6-8 >8	11	41	9	61	.118
		13	71	5	89	
	Place Out H In H	24	86	5	115	.000*
		0	26	9	35	
Lunch	Time No 1-3 >3	0	16	5	21	.000*
		24	65	9	98	
		0	31	0	31	
	Place No Out H In H	0	16	5	21	.010*
		0	10	0	10	
		24	86	9	119	
Dinner	Time No 9-11 >11	0	15	0	15	.003*
		15	81	14	110	
		9	16	0	25	
	Place No Out H In H	0	15	0	15	.006*
		6	6	1	13	
		18	91	13	122	

\*Significant



**Table 8.** Correlation Between Participants Academic Scores & Nutrients' Intakes

Type of nutrients'		Academic Score %								Chi-Square P value
		<2.5		2.5:4		>4		Total		
		No	%	No	%	No	%	No	%	
Animal meat	1-5	0	.0	36	24.0	0	.0	36	24.0	.000*
	6-15	24	16.0	55	36.7	14	9.3	93	62.0	
	>15	0	.0	21	14.0	0	.0	21	14.0	
Poultry	1-5	4	2.7	16	10.7	0	.0	20	13.3	.000*
	6-15	4	10.7	56	26.7	14	.0	74	37.3	
	>15	16	2.7	40	37.3	0	9.3	56	49.3	
Milk	1-5	4	.0	5	6	0	.0	9	6	.000*
	6-15	5	3.3	72	48.0	4	2.7	81	54.0	
	>15	19	12.7	31	20.7	10	6.7	60	40.0	
Eggs	1-5	6	4.0	19	12.7	5	3.3	30	20.0	.024*
	6-15	14	9.3	80	53.3	4	2.7	98	65.3	
	>15	4	2.7	13	8.7	5	3.3	22	14.7	
Liver	1-5	18	12.0	76	50.7	14	9.3	108	72.0	.108
	6-15	6	4.0	30	20.	0	.0	36	24.0	
	>15	0	.0	6	4.0	0	.0	6	4.0	
Fish	1-5	5	3.3	65	43.3	10	6.7	80	53.3	.005*
	6-15	15	10.0	41	27.3	4	2.7	60	40.0	
	>15	4	2.7	6	4.0	0	.0	10	6.7	
bean	1-5	0	.0	33	22.0	9	6.0	42	28.0	.000*
	6-15	24	16.0	63	42.0	5	3.3	92	61.3	
	>15	0	.0	16	10.7	0	.0	16	10.7	
Nuts	1-5	5	3.3	30	20.0	4	2.7	39	26.0	.175
	6-15	11	7.3	60	40.0	10	6.7	81	54.0	
	>15	8	5.3	22	14.7	0	.0	30	20.0	
Vegetables	1-5	0	.0	17	11.3	0	.0	17	11.3	.000*
	6-15	6	4.0	61	40.7	9	6.0	76	50.7	
	>15	18	12.0	34	22.7	5	3.3	57	38.0	
Fruits	1-5	4	2.7	22	14.7	0	.0	26	17.3	.004*
	6-15	10	6.7	67	44.7	14	9.3	91	60.7	
	>15	10	6.7	23	15.3	0	.0	33	22.0	
Sugary	1-5	5	3.3	11	7.3	0	.0	16	10.7	.282
	6-15	11	7.3	54	36.0	9	6.0	74	49.3	
	>15	8	5.3	47	31.3	5	3.3	60	40.0	
Date	1-5	11	7.3	40	26.7	5	3.3	56	37.3	.263
	6-15	9	6.0	48	32.0	9	6.0	66	44.0	
	>15	4	2.7	24	16.0	0	.0	28	18.7	
Canned food	1-5	4	2.7	20	13.3	0	.0	24	16.0	.051*
	6-15	14	9.3	51	34.0	4	2.7	69	46.0	
	>15	6	4.0	41	27.3	10	6.7	57	38.0	
Salty food	1-5	24	16.0	28	18.7	9	6.0	61	40.7	000*
	6-15	0	.0	41	27.3	5	3.3	46	30.7	
	>15	0	.0	43	28.7	0	.0	43	28.7	
Spicy	1-5	00	00	00	00	00	00	00	00	.015*
	6-15	10	6.7	31	20.7	9	6.0	50	33.3	
	>15	14	9.3	81	54.0	5	3.3	100	66.7	
Tea	1-5	13	8.7	41	27.3	0	.0	54	36.0	.000*
	6-15	6	4.0	33	22.0	14	9.3	53	35.3	
	>15	5	3.3	38	25.3	0	.0	43	28.7	
Coffee	1-5	9	6.0	21	14.0	0	.0	30	20.0	.025*
	6-15	6	4.0	39	26.0	9	6.0	54	36.0	
	>15	9	6.0	52	34.7	5	3.3	66	44.0	
Soft drinks	1-5	9	6.0	11	7.3	0	.0	20	13.3	.000*
	6-15	11	7.3	37	24.7	5	3.3	53	35.3	
	>15	4	2.7	64	42.7	9	6.0	77	51.3	
Juice fresh	1-5	8	5.3	26	17.3	0	.0	34	22.7	.000*
	6-15	6	4.0	77	51.3	4	2.7	87	58.0	
	>15	10	6.7	9	6.0	10	6.7	29	19.3	
Starchy	1-5	4	2.7	6	4.0	0	.0	10	6.7	.001*
	6-15	6	4.0	49	32.7	0	.0	55	36.7	
	>15	14	9.3%	57	38.0%	14	9.3%	85	56.7%	

\*Significant

**Table 9.** Correlation of Participants' academic Score with Major health Problems & Anthropometric Measurements

Major Health problems & Anthropometric Measurements		<2.5	2.5-4	>4	Total	Chi-Square P value
Fainting	Yes	5	35	0	40	.000*
	No	19	54	14	87	
	Uncertain	0	23	0	23	
General weakness	Yes	5	39	0	44	.000*
	No	0	29	0	29	
	Uncertain	19	44	14	77	
Loss of appetite	Yes	0	57	5	62	.000*
	No	18	50	9	77	
	Uncertain	6	5	0	11	
Abdominal Pain	Yes	6	47	10	63	.020*
	No	18	65	4	87	
	Uncertain	0	0	0	0	
Nausea	Yes	0	42	0	42	.000*
	No	18	65	14	97	
	Uncertain	6	5	0	11	
Recurrent headache	Yes	11	57	10	78	.378
	No	13	50	4	67	
	Uncertain	0	5	0	5	
Menses pain	Yes	16	82	9	107	.674
	No	8	30	5	43	
	Uncertain	0	0	0	0	
Menses irregularity	Yes	4	27	10	41	.000*
	No	20	67	4	91	
	Uncertain	0	18	0	18	
In concentration	Yes	0	39	0	39	.000*
	No	24	67	14	105	
	Uncertain	0	6	0	6	
Tiredness	Yes	5	82	9	96	.000*
	No	19	30	5	54	
	Uncertain	0	0	0	0	
Depression	Yes	0	39	0	39	.000*
	No	24	68	14	106	
	Uncertain	0	5	0	5	
Joint pain	Yes	5	39	0	44	.021*
	No	19	67	14	100	
	Uncertain	0	6	0	6	
BMI	- <20	9	36	0	45	.000*
	- 20-25	4	62	10	76	
	- >25	11	14	4	29	
Bp	- <100/60	15	37	5	57	.003*
	- 100/60- 140/80	4	60	6	70	
	- >140/80	6	14	3	23	
Bl. Glucose	- 70-125	20	92	10	122	.030*
	- >125	4	20	4	28	
Hb	- <10	0	9	5	14	.000*
	- >10	24	103	9	136	

\*Significant

**Table 10.** Correlation of Participants' Anthropometric Measurements & Their Nutrients' Intakes

Type of nutrients'		Anthropometric Measurements													
		BMI				Bp				Fasting B.S			Hg		
		<20	20-25	>25	P	<100/60	100/60	>140/80	P	70\12\5	>125	P	<10	>10	P
Total No		45	76	29		57	70	23		122	28		14	136	
Animal meat	1-5	14	17	5	.000	7	20	9	.004	36	0	.000	0	36	.050
	6-15	26	48	19		40	45	8		76	17		14	79	
	>15	5	11	5		11	3	7		10	11		0	21	
Poultry	1-5	5	15	0	.069	10	10	0	.169	16	4	.240	0	20	.142
	6-15	24	32	18		26	34	14		60	14		10	64	
	>15	16	29	11		21	26	9		46	10		4	52	
Milk	1-5	0	5	4	.000	5	4	0	.000	5	4	.395	4	5	.272
	6-15	30	37	14		30	42	19		67	14		5	76	
	>15	15	34	11		22	24	4		50	10		5	55	
Eggs	1-5	5	19	6	.002	15	14	0	.008	20	10	.036	9	21	.000
	6-15	33	42	23		30	50	18		84	14		5	93	
	>15	7	15	0		12	5	5		18	4		0	22	
Liver	1-5	25	65	18	.000	45	49	14	.033	85	23	.118	9	99	.001
	6-15	20	5	11		10	21	5		31	5		5	31	
	>15	0	6	0		2	0	4		6	0		0	6	
Fish	1-5	29	41	10	.000	26	40	14	.000	65	15	.008	0	80	.004
	6-15	12	33	15		31	23	6		53	7		9	51	
	>15	4	2	4		0	7	3		4	6		5	5	
bean	1-5	10	25	8	.000	18	21	3	.408	39	3	.001	0	42	.000
	6-15	27	48	16		39	41	12		72	20		6	86	
	>15	8	3	5		0	8	8		11	5		8	8	
Nuts	1-5	6	22	11	.000	9	20	10	.005	30	9	.000	0	39	.011
	6-15	29	39	13		33	40	8		71	10		14	67	
	>15	10	15	5		15	10	5		21	9		0	30	
Vegetables	1-5	0	17	0	.000	10	6	1	.258	17	0	.006	0	17	.175
	6-15	20	36	20		37	31	8		67	9		10	66	
	>15	25	23	9		10	33	14		38	19		4	53	
Fruits	1-5	8	18	0	.000	8	9	9	.058	26	0	.061	4	22	.049
	6-15	20	47	24		36	45	10		73	18		10	81	
	>15	17	11	5		13	16	4		23	10		0	33	
Sugary	1-5	0	11	5	.000	0	6	10	.000	16	0	.014	0	16	.003
	6-15	25	30	19		31	43	10		65	9		14	60	
	>15	20	35	5		27	21	3		41	19		0	60	
Date	1-5	5	40	11	.000	20	26	10	.000	46	10	.142	4	52	.062
	6-15	29	19	18		25	36	5		53	13		10	56	
	>15	11	17	0		12	8	8		23	5		0	28	
Canned food	1-5	10	14	0	.000	12	10	2	.000	15	9	.000	0	24	.000
	6-15	20	26	23		19	44	6		50	19		5	64	
	>15	15	36	6		26	16	15		57	0		9	48	
Salty food	1-5	19	23	19	.000	22	25	14	.695	43	18	.007	4	57	.002
	6-15	13	33	0		20	21	5		41	5		5	41	
	>15	13	20	10		15	24	4		38	5		5	38	
Spicy	1-5	0	0	0	.299	0	0	0	.166	00	0	.001	0	0	.021
	6-15	11	30	19		0	40	10		41	9		14	36	
	>15	34	46	10		57	30	13		81	19		0	100	
Tea	1-5	9	35	10	.000	19	31	4	.000	45	9	.000	0	54	.004
	6-15	14	20	19		15	30	8		34	19		10	43	
	>15	22	21	0		23	9	11		43	0		4	39	
	1-5	4	16	10	.000	9	15	6	.049	30	0	.000	0	30	.000

Coffee	6-15	17	22	15		22	25	7		35	19		5	49	
	>15	24	38	4		26	30	10		57	9		9	57	
Soft drinks	1-5	4	11	5	.002	10	5	5	.022	15	5	.008	0	20	.001
	6-15	21	16	16		23	20	10		48	5		5	48	
	>15	20	49	8		24	45	8		59	18		9	68	
Juice fresh	1-5	9	25	0	.000	14	16	4	.261	25	9	.066	4	30	.002
	6-15	31	41	15		34	40	13		77	10		5	82	
	>15	5	10	14		9	14	6		20	9		5	24	
Starchy	1-5	4	6	0	.001	7	0	3	.003	10	0	.047	0	10	.004
	6-15	17	27	11		20	27	8		40	15		5	50	
	>15	24	43	18		31	43	11		72	13		9	76	

## 4. Discussion

Education and health are linked. Students who had high score tend to be healthier, students with unhealthy behaviors have more health risks which adversely affect their achievement. In turn, health is an excellent indicator for the academic success of students & academic success is an excellent indicator for the overall students well-being. Habits relevant to health include physical activities, diet, smoking, drinking and drug consumption. There is a great need to address health and lifestyle of university students since their lifestyle behaviors may have an impact on their future lives and wellbeing[49]. We examined the association of university students lifestyle, with their health and educational achievement.

As regard socio demographic characteristic of participants in our study, the finding revealed that majority of them age more than 20 year ago, unmarried, had family health problem, represent in hypertension, diabetes & anemia as reported by participants. furthermore, more than half of participants had sufficient family income, family history to smoking, only 12.7% of them felt that their income was insufficient. Although, our finding revealed to more than two third of participants had change her weight in past 6 months, major of them had increase in weight, & taken either herbs or maintained on diet program to decrease her weight, however, body mass index revealed that more than quarter were obese (30%), while less than quarter were under weight (19.3%), our finding was agreement with a recent systematic review paper on obesity in Gulf Co-operation Council States (50) that reviewed 45 studies, reported prevalence of overweight and obesity in adults of 25–50% and 13–50%, respectively, with a higher prevalence of obesity amongst women. Moreover, the findings of the current study was in accordance WHO, 2012, that reported the prevalence of obesity amongst Saudi women was 43.5% compared to 24.5% in regional country has matched or exceeded that of other regions[51]

A nationwide survey indicated that a large number of high school students use unhealthy methods to lose or maintain weight. The survey found that during the 30 days before the survey, 10.6 % of students went without eating for 24 hours

or more; 4% had vomited or taken laxatives in order to lose weight; and 5% had taken diet pills, powders or liquids without a doctor's advice[52].

BMI and fitness were correlated with the academic performance for 5th grade girls[53]. There was a significant relationship between participant body mass index & her academic scores & nutrients intakes. Our results were in accordance to Cawley and Spiess 2008, concluded that a negative relationship exists between overweight and education[54].

Saudi Arabia has witnessed tremendous lifestyle changes over the past few decades. Data from a limited number of studies indicate that 60% of Saudi children and 71% of young people do not engage in physical activity of sufficient duration and frequency, there were 81.5% inactive, 14.5% minimally active, and only 4% active regarding female subjects[55]

Women who are physically active 6 or more times per month have a higher grade point average. Physical activity enhances student concentration and attention and improves classroom behavior, that a factors associated with academic success[56].

In addition to the adverse physiological effects of obesity which is attributed to physical inactivity, in turn, physical inactivity adversely influences academic performance[57]. The result of current study revealed to more than three quarter of participants were didn't perform regular exercise due to either they didn't like, hadn't time or & had weak health condition, despite this majority of them were agree to participating in exercise program. likewise, our finding revealed that Students who are physically active perform better academically than inactive students (p-value <0.05) this result was accordance to Henning Budde et al. 2008, found that 10 minutes of coordinative exercise significantly improved students concentration and attention[58]. These result may be due to the natural of living & environment in Saudi Arabia, that too hot atmosphere, culture beliefs & attitudes that not allowed for girls to walk, while all participants in this study were female & the little chance for sport club, parks, in turn lack leisure time of activity.

The sleepers were classified into three categories. 1) Short

sleepers, individuals who, slept six or fewer hours. 2) Average sleepers, individuals who slept seven or eight hours, and 3) long sleepers, individuals who slept nine or more hours out of twenty-four. The study found that people who were considered to be long sleepers reported higher grade performance average point (GPAs). Some past research on sleep suggests that people who sleep fewer hours a night may have psychological maladjustment. Sleeping shorter amounts of time has shown to increase factors such as anxiety and stress, which have been associated with academic performance. These factors cause students problems by causing shortened attention span and also increasing the number of errors students make on tests. [59]

Optimal sleep is an essential component of healthy lifestyle. Lack of sleep in college students has been identified as one of the academic situational constraints that diminish students' performance [60]. Furthermore, research has found that students who stay up late tend to have lower academic performance, poor quality of sleep and maladjustment to college life [61]. Our finding revealed that more than half of participants were get on an interrupted sleep for 4-8 hour \ day, about one third slept less than 4 hour \ day. About half of participant slept after midnight, majority feels the needs to day sleep, & hadn't taking alert drugs. there were a significant relationship found between participant slept hour, quality of sleeping & participants achievement ( $p < 0.05$ ), our result was accordance to Gibson et al. 2006, asserted that Sleep deprivation and excessive daytime sleepiness were common in both student samples and were associated with a decrease in academic achievement [62].

Research conducted in Sweden shows that female students had healthier habits related to alcohol consumption (95% of women in the study had a low alcohol consumption pattern compared to 75% of men [63]. Collins et al. 2007, reported that smokers were at higher risk of low academic achievement compared with nonsmokers [64]. The result of this study revealed that all participants didn't smoked, or taking alcohol, this may be due to a legal national policy, culture value that consider that alcohol is against Sharia & not accept to women to be smoker or drinking alcohol. While, more than half had family (brother followed by father) history to smoking, smoked 6-10 time \ day, for more than five years ago. There was a significantly ( $p < 0.05$ ) correlation between a passive smoking & academic scores for participants. The result was accordance to WHO 2012, that reported that prevalence of smoking among Saudi woman was 1% compared to 4% in regional average [51].

Drug abuse is identified as excessive use of a medication or substance. Drug abuse often affects a person's health. While the effects depend on the type of drug the person abuses. The impacts of drug abuse vary by drug but can be extremely serious. Physically, the effects can include light symptoms like loss of energy, rapid weight gain or loss and irritation of internal or external tissues, as well as more serious conditions like permanent brain damage, deadly overdoses and organ failure. In psychological terms, dependence on any substance can have negative clinical

effects, including difficulty concentrating, anxiety and loss of self-esteem [65]. Regarding to drug abuse, this study revealed to more than tow third were taken drugs without doctor prescription, 40% getting on drugs from her house followed from pharmacy & her friends, 23.3% taken drugs for 1- 5 time past 6 months, followed by 21.3% for 6-10, 12.7% for 11-15 & 11.3% taken more than 15 time \ 6 months. The most drugs taken were analgesic followed by multivitamin & antibiotics. The drugs taken was significantly correlated with student scores, ( $p < 0.05$ ), this result illustrated the health problems reported by participants, that taken analgesic for relieving pain, multi vitamin for participants who had low weight.

Studies have shown significant links were is a positive link between academic success and a positive perception of health and life in general [66]. Eating a healthful breakfast can improve students test scores because it provides them with a constant stream of energy that increases the brain's ability to concentrate. Eating a poor breakfast or nothing at all often leads to drowsiness and daydreaming, which can hinder their learning experience. On the other found between a healthy diet, eating breakfast and academic results. This indicates that there hand, students with healthy eating habits are less likely to be obese and more likely to learn well [67]. Fruits and vegetables are low in calories and provide many vitamins, minerals and antioxidants. Students who ate more fruits and vegetables were found to have greater self-reported academic performance. Nutrients in fruits and vegetables help protect the body from infection, which may lead to fewer missed days of school and more learning time [68].

Without proper nutrition and adequate calories, students often don't have enough energy to power the brain, resulting in fatigue and learning problems. In fact, alertness improved significantly in students eating breakfast [69]. The result of this study indicates that more than half were taken breakfast early morning at house & there were a significant Statistical result with their academic scores. Likewise, there were a correlation between participants academic score with time & place of lunch & time of dinner ( $p < 0.05$ ). The results illustrates the important of maintain on the basic three meals to be maintain on proper students success.

Regarding the natural of nutrients that students commonly taken past month as they reported, the most diet taken were spicy, starchy food & soft drinks for more than 15 time, & eggs, animals meat, mugs, & vegetable for 15 time, while, liver, fish, vegetable & date were taken for less than 5 time. However, there were a significant statistical difference between the dietary intake & academic score of participants regarding taken of animals meat, poultry, milk, eggs, fish, mugs, vegetables, fruit, salty food, teas, soft drinks, & juice as well as starchy foods. On the other hand, there were a significant statistical difference between the dietary intake & anthropometric measurements regarding BMI, Bp & Hb with intakes of eggs, liver, fish, nuts, fruits, sugary, canned food, teas, soft drinks & starchy diet, while there were a significant statistical difference between the dietary intake &

anthropometric measurements regarding BMI & Bp with animals meat, milk, & date ( $P < 0.05$ ).

The current result was accordance to Rethaiaa, et.al, 2010, they found that very few students consumed vegetables and fruits on a regular basis[70]. However, eating raw vegetables in the course of a meal is uncommon among the Saudi Population. An increase in dietary intake or energy from fats as well as the fact that rice, bread, and meat are regarded as the staple diet, which are used in almost every meal at Saudi youth that further illustrates the obesity among participants. Furthermore, the finding revealed that majority of participants were taken snacks between meals, major snacks taken were chips, followed by juice & biscuit. This seems to concur with other studies which found that obese student consume significantly more servings of meat, grain products, fast foods, sugar, sweetened drinks, and potato chips. These contribute to a higher caloric intake compared to non obese[71].

According to CDCP, 2010, only 22.3 % of high school students reported eating fruits and vegetables five or more times a day during the previous seven days. Poor nutrition and diets that leave students mal- or undernourished contribute to iron deficiencies. Iron deficiencies contribute to fatigue, failure to focus, lack of attention and the inability to complete prolonged work assignments[72]. The finding of this study revealed to about 10% of participants were suffer from anemia that reflected in their health problems as they reported & represented in tiredness, headache, general weakness, loss of concentration & hair loss & significantly impact on participants achievement.

According to the WHO, 2012, the prevalence rate of raised blood glucose among Saudi woman was 21.7% & blood pressure was 28.7%[51]. The finding of this study indicates that only 15.3% had high blood glucose level & 18.7% had increased blood pressure, this may be due to the participants may be take care to & maintain on primary prevention that already learned before in studying courses to avoiding suffering from this illness because their parent were already suffering from this illness as they reported.

Some research showed that university students reported more health complaints, but did not appear to seek help for these problems which included nervousness, headache and back ache or neck/shoulder ache[73]. Our finding were harmony with this result where all of participants didn't perform medical checkup & or seek assistance despite they suffer from some health problems as they reported represent in menstrual pain, tiredness, abdominal pain, headache, hair loss, & loss of appetite, they reported that didn't perform medical checkup due to feels of shame, think that wasn't impotents, expensive & or haven't a time. There were a significant statistical difference between participants major health problems & academic scores regarding fainting, general weakness, loss of appetite, abdominal pain, nausea, menses irregularity, loss of concentration, tiredness, depression, & joint pain, the result was concur with Gan et.al, 2007, they concluded that an individual's health status measured by the probability of sickness significantly affects

academic success[35].

Hygiene is defined as conditions and practices that promote and preserve health. Personal hygiene is important in our daily lives, as it keeps the body clean, prevents embarrassment and helps prevent the spread of infection. Good personal hygiene includes keeping all parts of the body clean through regular bathing, hair washing and grooming, tooth and mouth care, wound care, and good hand-washing techniques. Engaging in good personal hygiene practices not only helps prevent illness but may also make you feel better about yourself by boosting your confidence and self-esteem [74]. Our finding revealed that more than third of participants were taken bath three time a week, all of them washing hands after meals & after using toilet, brushing teeth, 72.7% out of them brushed teeth daily, but 70.3 didn't washing teeth after meals. More than half of them reported that had a good health, more than quarter had moderate health & similar proportion had either poor or perfect health.

Over all the finding were accordance to Arab Teens Lifestyle Study, 2010, [75] that indicates to proportion of youth who do not get daily sleep for 7 hours or more ranged from 27-81%. Only 18-48% of the sample eats breakfast daily and about 10-60% who have daily vegetables or fruit. Those who consume fast foods or sugary drinks 3 times or more per week ranged from 30-54% and 65-85%, respectively. In addition Girls were significantly less physically active than boys.

In the context, our findings have several important implications for university policy and practice. First, university should strengthen the opportunities to facilitate, support, and reinforce a wide range of health-related behavior, e.g. creating opportunities to incorporate healthy cafeteria choices that increase consumption of fruits and vegetables and reducing overall intake of animal fat and high-caloric beverages. Second, university should place more chance & attention to physical activity. Third, given attention to the influence of health behaviors and wellbeing on academic achievement, university would be wise to make additional investments periodic medical checkup of students. In conclusion, the findings from this study revealed to

1. There were a positive relationship between health status, health habits, and academic score.

2. Unhealthy lifestyle behaviors' have impacts in students health & academic score

Based on the result we recommended to

1. Universities need to pay attention to students health and wellbeing.

2. National program must be conduct to all students to improve healthy lifestyle awareness regarding healthy diet, importance of exercise, and periodic medical checkup, as well as personnel hygiene and avoiding drugs abuse & its impacts in general health and success.

3. Health programs that combine integration between Ministry of higher education & health may be more effective in improve health literacy.

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