

Assessment of the Nutritional, Health and Socioeconomic status of female students at Faculty of Science and Arts in Northern Border University, Saudi Arabia By

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Abstract

Food habits and healthy behaviors are among the main public health concerns of female students at the university, and the research aims to assess the nutritional, health, social and economic status of female students of the College of Sciences and Arts at Northern Border University, 150 randomly selected female students between the ages of 19-25 years were evaluated. Weights and heights were taken, body mass index was calculated, and some medical analyzes were done, including cholesterol (CHO), triglycerides (TGL), high-density lipoprotein (HDL), hemoglobin(Hb), and some questionnaires were conducted to assess the nutritional, health and economic status of the students and SPSS 21 software was used to analyze the data. The mean and standard deviation of the highest BMI (28.5175 ± 3.78) for the age group (19-20) and the lowest ($26,054 \pm 5.29$) for the age group (21-22). The income level for the entire sample was average (60%) and the

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highest income (69.3%) was for the age group (21-22), and the lowest (5.3%) was for the age group (19-20). The results showed that (58%) of the female students did not eat breakfast, (57.3%) did not eat vegetables and fruits on a daily basis, and (55.3%) drank carbonated water, and the results showed that (40.7%) of the females drink tea some of the time. The female students were overweight compared to (6%) who are underweight, and there is a high significance ($P = 0.004$) between the levels of BMI for the female students, and the results showed a significant presence ($P > 0.01$) between HDL-C and BMI, and the significance ($P < 0.0001$) between WBC and BMI for female students. The study concluded that most college students have poor eating habits, and as a recommendation, the university is encouraged to introduce nutritional programs to raise awareness among female students.

Keywords: Nutritional status - health status - science and arts students Northern Border University

Introduction

The role of nutrition in overall health is well established. Decisions made regarding food and beverage intake during each portion of the life cycle have both immediate and long-term health outcomes. Specifically, nutrition choices during the traditional college years, including late adolescence and early adulthood, have been linked to cardiovascular health later in life. For example, adequate intake of fruits and vegetables during college years was associated

with decreased risk of cardiovascular events decades' later (**Liu et al., 2012**)

It was found that more than (56.0%) skipped breakfast and (76.0%) ate between meals (**Omage, Kingsley and Omuemu, Vivian O, 2018**)

The results revealed that nearly 70 per cent of the adults have no regular meal routine per day (**Nasir, Jamal Abdul and Tahir, M. H.2017**)

(**Durán-Agüero S et al.; 2015**) it was found that Consumption ≥ 2 servings a day of fruits is a protective factor for a good BMI Chilean university students in physical education.

(**Musaiger AO et al.,2016**) stated that of the students among university students in Sudan, 20.5, 14.7, and 1.7 % were underweight, overweight and obese, respectively. The majority of students (85.5 %) consumed breakfast daily. About 45 and 21.8 % of students consumed vegetables and fruit, respectively, on more than 3 days a week. Fast food was consumed significantly more ($p < 0.01$) for more than 3 days per week by females (44.2 %) than males (27.3 %).

(**Al-Shehri et al.,2017**) analyzed of Assessment of lifestyle and eating habits among undergraduate students in Najran University, Saudi Arabia, where it was found Two-thirds of them had between 1 and 2 weekly servings of fruit and vegetables, more than

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half choosing the less healthy food, fast food in particular, and about one-third only having a regular healthy breakfast on a daily basis

A study (*El-Qudah, et al., 2012*) found that Females indicated a higher rate in the utilization of desserts and chocolates on regular routine (28.4 and 29.7%, individually) contrasted with guys (18.1 and 16.6%, separately) ($p < 0.05$). (Among a Sample of Saudi College Students in the north western city of Tabuk, Saudi Arabia A significant proportion of female students at Prince Sattam bin Abdulaziz have reported to consume energy drinks regularly with several adverse effects (*Rahamathulla, M. P, 2017*)

It was reported (*Sátiro Vieira,et al ,2017*) that the majority of university students were females (66.2%), and the prevalence of overweight was 20.4%. Students ranked in the intermediate and higher socioeconomic levels 2.86 and 3.46 presented the most chance of developing overweight, respectively

(*Khabaz, M. N.;et al.,2017* stated that were obese, (29.3%) were overweight and (41.4%) had normal body mass index. Overall, (57%) participants were taking 3 to 4 fast food meals weekly and was also taking junk food at least once in a day of King Abdulaziz University, Jeddah, Saudi Arabia

A study (*Abdelhafez, A. M.and Al-Mashi, S. S. M, 2013*) found that the prevalence of overweight and obesity among the studied students was 25% (19.2%, were overweight and 5.8% were

obese among Umm Al-Qura University Female Students in Makkah, Saudi Arabia

Another study showed relatively alarming prevalence of overweight/obesity, unhealthy dietary practices, and lifestyle behaviors that should be targeted and modified. (*Al-Shehri et al., 2017*) high ingestion of starches builds the opportunity of high Body Fat and Overweight, and a high admission of protein and lipids expands the danger of high Body Fat. (*Pi RA, et al., 2015*)

Hemodynamic changes after intake of energy drinks in obese subjects indicate that obesity and energy drinks could synergistically induce harmful effects. (*Ahmed Alsunni et al., 2015*) the aim of this study to assess the nutritional status, Health and Socioeconomic status of students of the College of Science and Arts, Northern Border University

Materials and Methods

Materials

A kilogram weighing balance ranging from 1 – 150 kilogram. Height was measured using a centimeter ruler and recorded to the nearest 0.1 centimeter (*Moussa,et al., 1989*) Body mass index (BMI) was calculated using the standard formula: weight (kg) / height (m²) according to (*Gibson 1990*). Questionnaires were conducted on the nutritional, health, economic and social status

Methods

Participants :A cross-sectional research included 150 female students were selected randomly from the faculty of science and arts, Northern Border University aged 19-25 years during February and May 2020. All participants filled a questionnaire having several questions regarding their dietary habits, socio-economic status and health. It is a measure of the social standing of an individual or a family in the society. It is an important factor affecting the health condition of an individual or a family. (**Sharma R., 2013**)

Blood samples were drawn by venipuncture into two different vacuainers between 0800 and 1300 h. Blood (~10 mL) was drawn into a vacuainer tube with EDTA for determination of hemoglobin (Hb), hematocrit (Ht), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), red blood cell count (RBC), white blood cell count (WBC)

Hb, Ht, WBC, RBC, MCV, MCH and MCHC were determined using a Coulter counter (Coulter® AC-T10 Hematology Analyzer; Coulter Electronic, Miami, FL)

Biochemical parameters included determination of hemoglobin, hematocrit and red blood cells (RBC) (**Wintrobe, 1965**)

Hematocrit was considered to be abnormal at values < 0.36 for females and < 0.41 for males (**Gibson 1993**). RBC for females was considered normal in the range of 4200–5800/mm³ and for males, 3600–5600/mm³ (**Gibson 1993**). The cut-off values for the red blood cell indices were as follows: MCV < 80 fL, MCH < 27 pg and MCHC < 320 g/L (**Gibson 1993**)

Statistical analysis: Data collected from the questionnaires were entered and analyzed using IBM SPSS Statistics version 21.0 for Windows (SPSS Inc., Chicago, IL, U.S.A.) Descriptive analysis (mean, standard deviation (SD), frequency distribution, and correlation coefficient) was performed by the Statistical Package of Social Science (SPSS) version (20). The minimal level of significance will set at $P < 0.05$ (**Nie et al., 1975**). and chi-square test was performed to make some comparisons

Results and Discussion

Table (1) shows mean \pm S.D of some anthropometric measurements for female students. It revealed that, the total mean of age was (22 ± 1.20) y and the total mean of wt. was (65 ± 13.25) kg with the highest (70.75 ± 11.64) kg among age group (19- <21), while the total mean of height was (158.5 ± 6) cm with slightly differences among age groups. In case of BMI the total mean of female students was (25.87 ± 5.20) (WT/HT²) with the highest among age group (19-

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<21) y .It noticed that our results were agree with the results of (**Bano et al., 2013**)

Table (2) shows percent distribution of students in relation to education and occupation of their parents,, As shown, the most of fathers of the study sample had secondary certificate (42%). On other hand, the most of mothers of the study sample were Illiterate (40%). (86%) of mothers were head of household, (40%) of their fathers were A job without a certificate (retired) . Socioeconomic classification is an important predictor of the health status of an individual or family. The income-based socioeconomic scales. Therefore, the BG Prasad scale used widely to determine the socioeconomic status in health studies and in community health-related studies (**Abha Mangal et al., 2014**) The results in table (3) shows percent distribution of student's relation to socio-economic of their families, The majority of families of the study sample were located in the moderate income (60%)The test (chi-square χ^2) showed that there were different significantly in income between age groups ($p= 0.021$) according to (**Park,J.E and Park,k., 1979**)

Table (4) shows percent distribution of students in relation to some dietary habits, out of 150 university students,(47.3%)of the study sample eat only two meals a day followed by (36%)eat only one meal, while (58%) do not eat breakfast, (57.3%) do not eat vegetables and fruits daily, and that(52%)eat fast food and do not reduce it, and that (55.3%) drink carbonated water and (60.7%) drink tea with meals. A study in university students showed that most (80%) of the students take carbonated drinks more than four times a

week .A high percentage of fast foods and carbonated drinks consumption our results were agree with the results of (**Musaiger, A.O et al., 2017**), A high prevalence of eating disorders was found among females at Taif university, Kingdom of Saudi Arabia (**Taha et al.,2018**) There was no significant correlation between age or status in school and reported intake of fruits and vegetables (**Driskell et al., 2005**). students are commonly consume a high quantity of snack foods, soft drinks, high-calorie food, but eat fewer fruits, vegetables and dairy products than the recommended quantity (**Al-Khamees, 2009**)

The results of the current study were consistent with the study conducted by **Andere and Kyallo (2010)** At the University of Kenya, where it was shown that female students follow bad food practices, one third do not break their fast and 60% eat fried food, drink soft drinks and eat vegetables and fruits in a lower amount than recommended. The BMI classification used in this study was based on the WHO international cut-off values

Table (5) shows percent distribution of students in relation to body mass index. The results showed that (40%) of the female students are overweight and that (6%) are underweight. In Palestinian universities, his study showed that (**Bayyari et al, 2013**) the average BMI among female students was close to the body mass index of Saudi female students in the current study. The test (chi-square χ^2) showed that there were different significantly in Body Mass Index (BMI) between age groups ($p= 0.004$)

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Table (6) shows percent distribution of female students in relation to public health status. Female students are shown to have regular diseases (94%), for example: cough-cold-anemia, (87.33%) do not suffer from yellowing of the color of the eyes, and (76.66%) suffer from Headache. The most commonly used screening methods for the presence of iron deficiency in university students are the measurements of hemoglobin or hematocrit concentration for the presence of anemia (**WHO 1972**). Table (7) percent distribution of anemic and non-anemic students according to Hb at college of science and arts in Saud Arabia, Anemic (8%) and non –anemic (92%) These results are in contrast to a study (**Hani UK et al., 2021**) where (39.7%) students had anemia.

Table (8) show Mean \pm SD of some biochemical analysis among students in relation to age groups, The results of the analysis showed a significant presence of both LDL (low densitylipoprotein)($p=0.001 < 0.05$),HCT(Hematocrit)($P=0.02 < 0.05$) and MCV (mean corpuscular volume) ($P=0.007 < 0.05$). I tried to find a reference related to these results, but I could not find it

Table (9)shows mean \pm S.D of some biochemical analysis among female students in relation to BMI categories .The results showed that there are significant differences between BMI categories with HDL-C and HCT, while it were highly significant difference with WBC , Hb and MCV. For other analysis there were no significant differences. I tried to find a reference related to these results, but I could not find it

Table (10) illustrates the percentage distribution of female students according to food habits in relation to BMI categories .from the table, it was noticed that., 53.3%,79.3% and 58% of the students were pay attention to weight , eat foods between meals, and drinking carbonated beverages, with highly significant differences with BMI categories in case of drinking carbonated only our results were agree with **(Che Wan Jasimah Wan Mohamed Radzi et al., 2019)** . While for the other habits it was more or less comparable for yes and no.

Conclusion

From our study we can concentrate to the importance of eating three meals as well as eating breakfast in addition the need to reduce the intake of fast food and soft drinks due to its harmful effect on human health where are found a relationship between soft drinks and BMI, so the need to pay attention to eating green vegetables and fruits every day is important to avoid over weight and obese as well as cardiovascular disease and other chronic diseases.

Table (1) Mean \pm SD of anthropometric measurements of female students

Age groups (y)	Mean \pm SD		
	Weight (kg)	Height (cm)	BMI(kg/m ²)
19-	70.75 \pm 11.64	157.25 \pm 4.49	28.5175 \pm 3.78
21-	63.339 \pm 12.9	157.310 \pm 6.64	26.054 \pm 5.29
23-25	66.351 \pm 12.93	156.837 \pm 4.561	26.963 \pm 5.146
Mean \pm SD of total 22 \pm 1.20	65 \pm 13.25	158.5 \pm 6	25.87 \pm 5.201

Table (2) percent distribution of students in relation to education and occupation of their parents

	Father		Mother		
	No	%	No		%
Education			Education		
Illiterate	28	18.66%	Illiterate	60	40%
Read and write	32	21.33%	Read and write	41	27.33%
Primary	14	9.33%	Primary	16	10.66%
Secondary	63	42%	Secondary	22	14.66%
university	13	8.66%	university	11	7.33%
Total	150	100%	Total	150	100%
Occupation			Occupation		
No work	46	30.66%	Head of household	129	86%
Merchant	12	8%	Middle qualified employee	10	6.66%
Middle qualified employee	15	10%	A highly qualified employee.	3	2%
Highly qualified employee	13	8.66%	others	8	5.33%
Others					
A job without a certificate (retired)	60	40%			
Total	150	100%	Total	150	100%

Table (3) percent distribution of student's relation to socio-economic of their families

Age groups (y)	socio-economic levels						Total	
	Low 1000- SR		Middle 3000- SR		High 6000 or more SR			
	NO	%	No	%	NO	%	NO	%
19-	0	0	2	25%	6	75%	8	5.3%
21-	9	8.65%	60	57.6%	35	33.6%	104	69.3%
23-25	0	0	28	73.6%	10	26.3%	38	25.3%
Total	9	6%	90	60%	51	34%	150	100%
chi-square χ^2	Value					11.5113		
	Prob					0.0214		

SR: Saudi riyals

Table (4) percent distribution of students in relation to some dietary habits

Dietary Habits Mean±SD		NO	%
The number of meals eaten per day 1.86±0.819	One meal	54	36
	Two meal	71	47.3
	three meal	17	11.3
	more	8	5.3
	Total	150	100
eat breakfast 1.58±0.495	Yes	63	42
	No	87	58
	Total	150	100
daily intake of fruits and vegetable 1.57±0.496	Yes	64	42.7
	No	86	57.3
	Total	150	100
Reduce the amount of fried foods or fast foods 1.71±0.630	Yes	58	38.7
	No	78	52
	Sometimes	14	9.3
	Total	150	100
Drinking carbonated water 1.63±0.064	Yes	83	55.3
	No	39	26
	Sometimes	28	18.7
	Total	150	100
drink tea 2.080±0.8555	Yes	49	32.7
	No	40	26.7
	Sometimes	61	40.7
	Total	150	100

Table (5) percent distribution of students in relation to body mass index

BMI Categories Age groups(y)	BMI(WT/HT2)								Total	
	Under Wt. < 18.5		Normal 18.5–24.9		Over Wt. 25–29.9		Obese ≥ 30.0			
	No	%	No	%	No	%	No	%	No	%
19-	0	0	2	18.1	4	36.3	5	45.4	11	7.33
21-	7	6.79	37	35.9	34	33	25	24.2	103	68.6
23-25	2	5.5	6	16.6	22	61.1	6	16.6	36	24
Total	9	6	45	30	60	40	36	23.9	150	100
chi-square χ^2	Value	18.8572								
	Prob	0.0044								

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

Table (6) percent distribution of female students in relation to public health status.

Variables	NO	%	
Disease	Regular	141	94%
	Chronic	9	6%
	Total	150	100%
Change in the color of the urine.	Yes	23	15.33%
	NO	127	84.66%
	total	150	100%
parasites in the stool	Yes	6	4%

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	N0	144	96%
	Total	150	100%
Food allergies	Yes	44	29.33%
	N0	106	70.66%
	Total	150	100%
Headache	Yes	115	76.66%
	N0	35	23.33%
	Total	150	100%

Table (7) percent distribution of anemic and non-anemic students according to hemoglobin cut-off (WHO, 1972)

Age group/years	Hb <12 gm/dl		Hb ≥ 12 gm/dl		Total	
	Anemic		Non - anemic		No	%
	No	%	No	%		
19-	0	0	8	5.33%	8	5.33%
21-	9	8.41%	97	91.58%	106	70.66%
23-25	3	8.33%	33	91.66%	36	24%
Total	12	8%	138	92%	150	100%
chi-squar χ^2	Value	0.7357				
	Prob	0.6922				

Table (8) Mean \pm SD of some biochemical analysis among students in relation to age groups

Tests	Age groups(yrs)			Total 150
	19- (n=8)	21- (n=105)	23-25 (n=37)	
CHO(mmo/L) Mean \pm SD	4.43a \pm 0.4	4.60a \pm 0.82	4.91a \pm 0.84	4.49 \pm 0.82
F Value 2.35	Pr > F 0.0990	LSD 0.529		
TGL(mmol/L) Mean \pm SD	0.99a \pm 0.38	0.86a \pm 0.40	0.93a \pm 0.42	0.88 \pm 0.40
F Value 0.68	Pr > F 0.5074	LSD 0.265		
HDL-c(mmol/L) Mean \pm SD	1.76a \pm 0.27	1.87a \pm 0.48	1.85a \pm 0.4	1.86 \pm 0.44
F Value 0.20	Pr > F 0.8185	LSD 0.295		
LDL-C(mmol/L) Mean \pm SD	3.99b \pm 0.395	3.027b \pm 0.77	3.57a \pm 0.87	3.11 \pm 0.80
F Value 6.80	Pr > F0.0015*	LSD 0.510		
WBC(mmol/L) Mean \pm SD	9.46a \pm 0.695	7.78b \pm 2.20	8.27ab \pm 2.2	7.6 \pm 2.449
F Value 2.06	Pr > F 0.1312	LSD 1.5907		
RBC(mmol/L) Mean \pm SD	4.807a \pm 0.20	4.790a \pm 0.27	4.688a \pm 0.51	4.71 \pm 0.647
F Value 1.20	Pr > F 0.3055	LSD 0.2309		
HB(mmol/L) Mean \pm SD	13.90a \pm 0.34	13.19ab \pm 1.2	12.80b \pm 1.3	13.4 \pm 1.266
F Value 2.87	Pr > F 0.0601	LSD 0.818		
HCT(mmol/L) Mean \pm SD	41.150a \pm 1.7	39.4ab \pm 2.83	38.22b \pm 3.6	39.7 \pm 3.0748
F Value 3.92	Pr > F 0.0219*	LSD 1.9562		
MCV(mmol/L) Mean \pm SD	3.33a \pm 47.57	-19.8ab \pm 2.08	-62.53b \pm 28.1	89.1 \pm 40.981
F Value 5.11	Pr > F 0.0071*	LSD 49.152		
MCH(mmol/L) Mean \pm SD	28.95 a \pm 1.08	18.21a \pm 1.49	19.74a \pm 10.56	29.1 \pm 1.333
F Value 1.07	Pr > F 0.3473	LSD 13.136		

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MCHC(mmol/L) Mean ± SD	33.82a±1.46	30.59a±1.05	33.49a±1.039	33.3± 6.142
F Value 1.05 Pr > F 0.3524 LSD 7.4459				
P LT(mmol/L) Mean ± SD	305.25a±146	294.86a±517	310.3a±109.79	281± 79.44
F Value 0.96 Pr > F 0.3861 LSD 38.853				

Means with the same letter are not significantly different

Table (9) Mean ± SD of some biochemical analysis among students in

	BMI (Mean ± SD)			
	Under Wt. < 18.5	Normal 18.5 to 24.9	Over Wt. 25 to 29.9	Obese 30 or more
CHO(mmol/L) Mean ± SD	4.33a±0.028	4.77a±0.94	4.60a±0.723	4.74a±0.89
F Value 0.9 Pr > F 0.408 LSD 0.4863				
TGL (mmol/L) Mean ± SD	0.93a±0.344	0.88a±0.45	0.87a±0.418	0.85a±0.35
F Value 0.11 Pr > F 0.9 LSD 0.2445				
HDL-C (mmol/L) Mean ± SD	2.26a±0.680	1.90b±0.43	1.82b±0.457	1.75b±0.31
F Value 3.47 Pr > F 0.0180 LSD 0.26				
LDL-C(mmol/L) Mean ± SD	2.73b±1.041	3.30a±0.84	3.20ab±0.84	3.01a±0.59
F Value 1.71 Pr > F 0.1678 LSD 0.4795				
WBC(mmol/L) Mean ± SD	6.48c±1.567	8.18ab±2.50	7.22bc±1.9	9.44a±2.74
F Value 7.90 Pr > F <.0001 LSD 1.377				
RBC(mmol/L) Mean ± SD	4.66a±0.122	4.79a±0.307	4.74a±0.43	4.75a±0.3
F Value 0.41 Pr > F 0.7455 LSD 0.2132				
HB (mmol/L) Mean ± SD	13.71±0.846	13.42ab±0.9	13.07ab±1.3	12.82b±1.4
F Value 2.19 Pr > F 0.0918 LSD 0.7344				
HCT (mmol/L) Mean ± SD	40.47a±1.23	39.95ab±2.0	38.95ab±3.5	38.60b±3.3
F Value 2.05 Pr > F 0.109 LSD 1.7843				
MCV (mmol/L) Mean ± SD	-6.644a±91.8	-6.630a±84.4	-44.72a±70	-34.07a±756
F Value 2.35 Pr > F 0.07 LSD 45.911				

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MCH (mmol/L) Mean ± SD	29.40a±1.74	19.77ab±20	19.5ab±19.8	16.80b±21.9
F Value 0.95	Pr > F 0.4205	LSD 11.837		
MCHC(mmol/L) Mean ± SD	33.86a±1.159	33.61a±1.0	32.48a±8.47	27.95a±18.3
F Value 2.25	Pr > F0.0855	LSD 6.1198		
P LT (mmol/L) Mean ± SD	268.8b±53.7	302.19ab±59	286.66b±61.	322a±53.5
F Value 3.51	Pr > F 0.0169	LSD 34.835		

relation to BMI.

Means with the same letter are not significantly different

Table (10) percent distribution of female students according to food habits in relation to BMI

		BMI									
		Under weight < 18.5 No %		Normal 18.5 - 24.9 No %		Over weight 25 - 29.9 No %		Obese ≥ 30.0 No %		Total No %	
Pay attention to weight	YES	5	6.25	25		34	42.5	16	20	80	53.3
	NO	5	7.14	31.25		29	41.4	17	24	70	46.6
Chi-Square		Value 0.5812				Prob 0.9007				150	100
Eat fruits and vegetables every day	YES	5	7.14	29	41.42	20	28.5	16	22.8	70	46.6
	NO	5	6.25	17	31.25	40	50	18	22.5	80	53.3
Chi-Square		Value 9.2894				Prob 0.0257				150	100
Reduce the amount of fried foods or fast foods	YES	5	7.9	25	39.68	21	33.3	12	19	63	42
	NO	5	5.74	26	29.88	36	41.37	20	22.9	87	58
Chi-Square		Value 2.1829				Prob 0.5353				150	100
Eat foods between meals	YES	8	6.72	37	31	43	36.13	31	26	119	79.3
	NO	1	3.22	6	19.35	18	58	6	19.35	31	20.66
Chi-Square		Value 5.0386				Prob 0.1690				150	100
Carbonated drinks	YES	0	0	3		46	52.87	38	43.67	87	58
	NO	9	14.28	3.44		14	22.22	2	3.17	63	42
Chi-Square		Value 86.7249				Prob <.0001				150	100

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" تقييم الحالة الغذائية والصحية والمستوى الإجماعى والإقتصادى لطالبات كلية العلوم والاداب , جامعة الحدود الشمالية , المملكة العربية السعودية "

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الملخص العربى

تعتبر العادات الغذائية والسلوكيات الصحية من الاهتمامات الرئيسية للصحة العامة للطالبات في الجامعة ، ويهدف البحث إلى تقييم الحالة التغذوية والحالة الصحية والاجتماعية والاقتصادية لطالبات كلية العلوم والاداب بجامعة الحدود الشمالية، حيث تم تقييم ١٥٠ طالبة تم اختيارهن عشوائياً تتراوح أعمارهن بين ١٩-٢٥ سنة. تم أخذ الأوزان والاطوال ، وتم حساب مؤشر كتلة الجسم ، وتم عمل بعض التحاليل الطبية منها الكولسترول (CHO) ، والدهون الثلاثية (TGL) والبروتين الدهني عالى الكثافة (HDL) ، والهيموجلوبين (Hb) ، وبعض الاستبيانات تم إجراؤها لتقييم الحالة التغذوية والصحية والاقتصادية للطلاب وتم استخدام برنامج SPSS 21

لتحليل البيانات. المتوسط والانحراف المعياري لمؤشر كتلة الجسم الأعلى ($3,78 \pm 28,0175$) للفئة العمرية (19-20) والأدنى ($5,29 \pm 26,054$) للفئة العمرية (21-22). كان مستوى الدخل للعينة بأكملها متوسطاً (60%) وكان أعلى دخل (69,3%) للفئة العمرية (21-22)، وأقل دخل (5,3%) للفئة العمرية (19-20). أظهرت النتائج أن (58%) من الطالبات لم يتناولن وجبة الإفطار، و (57,3%) لم يتناولن الخضار والفواكه بشكل يومي (55,3%) شربن المياه الغازية ، وأظهرت النتائج (40%) من الإناث الطالبات يعانون من زيادة الوزن مقارنة بـ (6%) الذين يعانون من نقص الوزن، وهناك دلالة عالية ($P = 0.004$) بين مستويات مؤشر كتلة الجسم للطالبات ، وأظهرت النتائج وجود معنوي ($P > 0.01$) بين HDL -C و BMI ، والدلالة ($P = 0.0001$) بين WBC و BMI للطالبات. وخلصت الدراسة إلى أن معظم طلاب الجامعات لديهم عادات غذائية سيئة ، وعلى سبيل التوصية ، يتم تشجيع الجامعة على تقديم برامج تغذية لزيادة الوعي لدى الطالبات. الكلمات المفتاحية: الحالة التغذوية - الحالة الصحية - طلبة العلوم والآداب - جامعة الحدود الشمالية