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ORIGINAL RESEARCH

Association between Dietary Habits and Nutritional Status among Female Adolescents

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ABSTRACT

Background: Adolescents with good eating habits are more likely than those with bad eating habits to learn normally and do better academically. Dietary habits refer to the long-term dietary patterns that an individual forms and maintains in his daily life.

Objectives: The study aims to assess influence of dietary habits of adolescent girls on nutritional status and identify if their association between pattern of dietary habits and nutritional status among female adolescents.

Methodology: A cross-sectional study was conducted with 400 students from middle and secondary schools in Karbala City, Iraq. Data were collected from December 2o, 2023 to February 4, 2024, Data collection was performed using self-report instrument and it is organized into three sections, include, dietary habits, nutritional status and sociodemographic data. Data were analyzed utilizing descriptive and inferential statistics.

Results: That 61% of female adolescents have normal weight and 20.2% of female adolescents have underweight but 12% of them have overweight. Exhibits that female adolescent having moderate dietary habits as reported among 73% of them (M±SD= 11.96 ± 1.81.

Conclusion: The eating habits of adolescent's girls do not affect the nutritional status, and most of them have healthy eating habits, while about one fifth of them have unhealthy eating habits, and more than a third of them had an abnormal body mass. Which indicates the importance of involving them in healthy awareness programs about healthy nutrition and ways to maintain a normal level of body mass.

Keywords: Association, Dietary Habits, Nutritional, Adolescent Girls.

INTRODUCTION

Adolescent are a demographic that is particularly sensitive to nutrition because of a number of characteristics, including their high growth-related nutritional needs, their dietary and lifestyle choices, their risk-taking nature, and their susceptibility to external influences. Therefore, encouraging a healthy diet beginning in adolescence is crucial for maintaining health throughout life [(1)]. Dietary and other lifestyle behaviors formed during adolescence contribute to adulthood behaviors. Therefore, school is a good platform for addressing the health and nutrition needs of adolescents as an important step towards reinforcing health behavior in the future [(2)].

In response to this growing concern, many of them have altered their diets, which carries a significant danger to nutritional status, the development of eating disorders, and the psychological growth of the population. There are

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many different reasons why people are unhappy with their weight and body shape, including body image issues, peer pressure, media habits, age, gender, and familial context [3]. There are many measures developed by scientists to evaluate nutritional status of individuals. And body mass BMI is one such important measure used to evaluate nutritional status [4]. The variety of choices that people or groups should make on the kinds of meals that are essential to eat is referred to as dietary habits. Maintaining a healthy diet requires eating meals that are high in essential fats, complex carbohydrates, proteins, and vitamins and minerals. Adopting healthy eating habits can help prevent many of the difficulties that come with adolescence and later years. Examples of how the dietary patterns are portrayed in food groups are fruits and vegetables, meat and eggs, milk and milk products, starchy foods, legumes, fats and oils, and sugary foods [5]. It was anticipated that the eating habits of male and female students would differ. It was further hypothesized that female students would be more careful about their diet than male students [6]. The vulnerability of adolescents to malnutrition has been increasing due to inadequate attention in most of the health programs and nutrition interventions. Most nutrition interventions have focused on under-five children and women of reproductive age, particularly pregnant and lactating women leaving out the adolescent group, who are also vulnerable to malnutrition due to the additional nutrient demand for physical growth and development [2].

AIMS OF THE STUDY

The Objective of the Study aimed to identifying the dietary habits and assess nutritional status as well as the association between, Dietary Habits, and Nutritional Status (Body Mass Index) among Adolescents girls.

METHODOLOGY

From December 2o, 2023 to February 4, 2024, data collection took place in Karbala Holy Governorate secondary schools. The study applied quantitative research approach using Semi structured previously pretested questionnaire. The questionnaire administered gather information about Nutritional dietary habits and nutritional status. The samples were selected. Randomly from separate areas of the center of Karbala Holy Governorate, A sample of 400 total adolescent girls was chosen to obtain the data.

Study Instrument:

Questionnaire of the Study: adapted from the scale (Nabeel Al-Yateem, etal, 2017, Maponya Thabo Daniel, 2020) of Dietary Habits, and Nutritional Status.

The questionnaire divided into three parts:

Part 1: This section covers information on secondary school students' socio-demographic characteristics, including their age, School grade, Residency, Level of education Mother and Father. Occupation of Mother and Father, Monthly Income.

Part 2: This segment, which consists 6 item Assessment of Dietary Habits among Female Adolescents.

Part 3: This segment, which consists measurement nutritional status by body mass index. (O'Connor, 2020)The data were analyzed and interpreted through use of the application of Statistical Package for Social Sciences (SPSS), version 26.0.

RESULTS

Analyzing data by method depends on the nature of the collected data, with quantitative research specifically utilizing descriptive and inferential statistics to analyze numerical data.

Table (1): Overall Assessment of Dietary Habits among Female Adolescents

Habits	F	%	M	SD	Assessment
Poor	86	21.5	11.96	1.819	Moderate
Moderate	292	73			
Good	22	5.5			
Total	***400***	***100***			

f: Frequency, %: Percentage, M: Mean for total score, SD: Standard Deviation for total score, Poor= 6 – 10, Moderate= 11 – 14, Good= 15 – 18.

This table exhibits that female adolescent having moderate dietary habits as reported among 73% of them (M±SD= 11.96 ± 1.81.

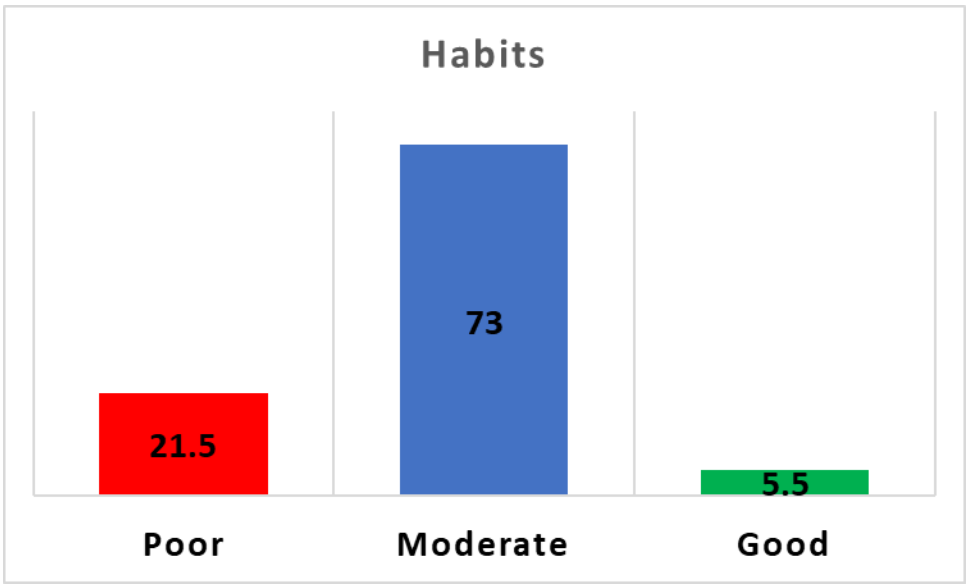

Figure (1): Overall Level of Dietary Habits among Female Adolescents Students (N=400)

Table (2): Distribution of Participants according to their Body Mass Index

Body mass index	Reference range*	f	%
Underweight	< 18	81	20.2
Normal	18.5 – 24.9	244	61.0
Overweight	25 – 29.9	48	12.0
Obesity I	30 – 34.9	18	4.5
Obesity II	35 – 39.9	8	2.0
Obesity III	≥ 40	1	0.3
Total		***400***	100

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation, *World Health Organization

.

This table exhibits that 61% of female adolescents are with normal weight while 20.2% reported with underweight and 12% reported with overweight.

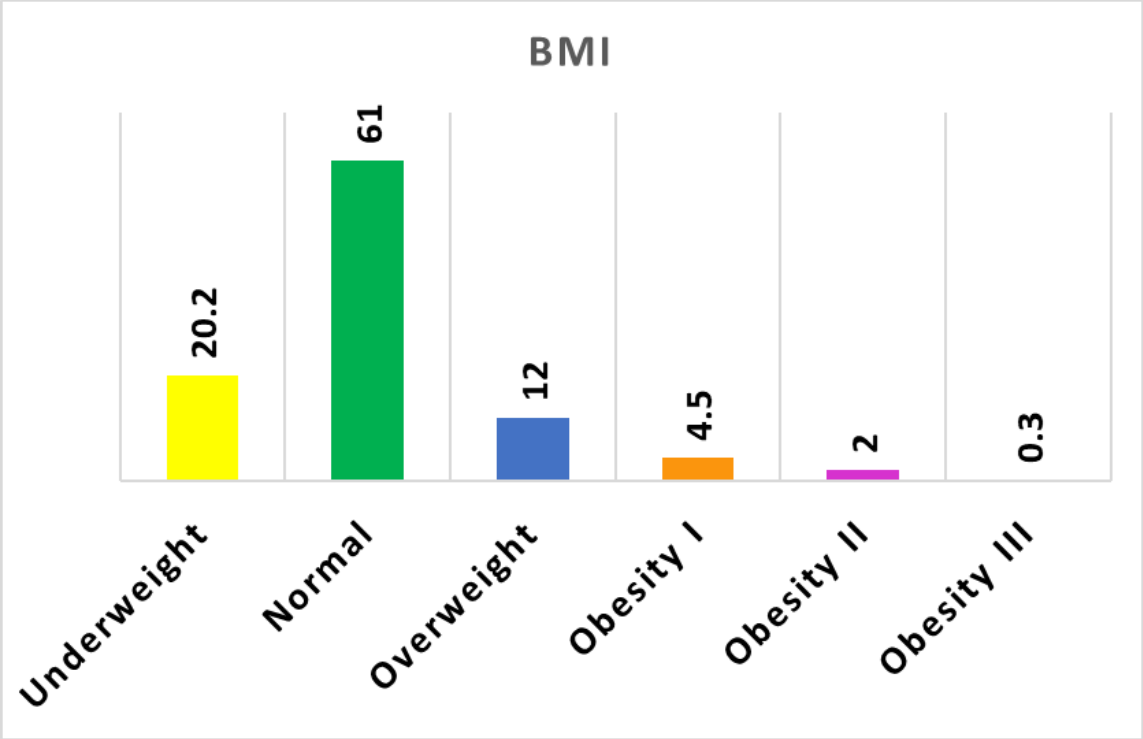

Figure (2): Body Mass Index of Female Adolescents Students (N=400).

Table (3): Correlation among, Dietary Habits, and Nutritional Status (Body Mass Index) among Female Adolescents Students (N=400).

Correlation		Dietary habits	BMI
Dietary habits	Correlation Coefficient	1.000	-.004
	Sig. (2-tailed)	.	.935
BMI	Correlation Coefficient	-.004	1.000
	Sig. (2-tailed)	.935	.
	Sig. (2-tailed)	.078	.715

This table reveals that there no significant correlation reported dietary habits among female adolescents and their nutritional status.

Table (4): Relationships between Female Adolescents' Nutritional Status and their Age

Age	Body Mass Index							Relationship
	Underweight	Normal	Overweight	Obesity I	Obesity II	Obesity III	Total	
12 – 15 year	52	109	21	10	7	0	199	***r**** **= .032**
16 – 19 year	29	135	27	8	1	1	201	**P-value= .523**
Total	81	244	48	18	8	1	400	**Sig= N.S**

r* = point biserial correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

.

This table indicates that there is non-significant relationship between nutritional status and age among female adolescent students.

Table (5): Relationships between Female Adolescents' Nutritional Status and their Residency

Residency	Body Mass Index							Relationship
	Underweight	Normal	Overweight	Obesity I	Obesity II	Obesity III	Total	
Rural	0	3	1	0	0	0	4	r^* = -.020
Urban	81	241	47	18	8	1	396	P-value= .683
Total	81	244	48	18	8	1	400	Sig= N.S

r* = point biserial correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant.

This table depicts that there is no significant relationship has been reported between nutritional status and residency among female adolescent students.

Table (6): Relationships between Female Adolescents' Nutritional Status and their Family Monthly Income

Income	Body Mass Index							Relationship
	Underweight	Normal	Overweight	Obesity I	Obesity II	Obesity III	Total	
Less than 300,000	20	59	8	7	1	0	95	
300,000 – 600,000	11	49	9	3	1	0	73	r_s = -.011
601,000 – 900,000	19	56	12	1	4	1	93	P-value= .834
901,000 – 1,200,000	12	38	12	4	0	0	66	Sig= N.S
1,201,000 – 1,500,000	19	42	7	3	2	0	73	
Total	81	244	48	18	8	1	400	

r_s = Spearman correlation coefficient, P= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant.

This table indicates that there is no significant relationship has reported between nutritional status and family monthly income among female adolescent students.

DISCUSSION:

The study shows that, according to 73% of the female adolescents, their dietary habits are moderate (M±SD= 11.96 ± 1.819). These results conflict with the study Meal skipping accounted for 147 (9.5%) of the bad eating habits [7]. The study shows that 61% of adolescent girls are of a normal weight, although 12% and 20.2% of them reported being overweight and underweight, respectively. According to a consistent study conducted that show half of the students (52.4%) had a normal body mass index, 13% were obese, and 16.6% were pre-obesity [8].

Another study contradicts the findings of that show younger teenagers were more likely to report being underweight [9]. According to the study, there is no discernible relationship between the nutritional condition of female adolescents and the food habits they describe. According to the research revealed that. The findings of the study indicated that there was no significant correlation between the nutritional health of students and their dietary habits, including snacking, eating a balanced diet, and having the heaviest meal of the day [10].

The study's findings showed that that there is non-significant relationship between nutritional status and age among female adolescent students. These results conflict with the study Based on the bivariate analysis so that obtain the significant value (p value) are 0.002 from this result, it can be concluded that there was a relationship between nutritional statuses and age [11].

The study's findings showed that that there is non-significant relationship between nutritional status and residency among female adolescent students. These results Consent research finding there is no significant statistical association between BMI with residency [12]. The study's findings showed that there is no significant relationship has reported between nutritional status and family monthly income among

female adolescent students. The mean family monthly income of the participants was 44,696 Naira, which was statistically associated with their BMI ($P < 0.001$) [13].

CONCLUSIONS:

Although the results of the study showed that the nutritional status of adolescent girls is not affected by their eating habits and the most of the sample members have healthy eating habits, there remains an important percentage, about one fifth of the adolescent girls, who have unhealthy eating habits, and that more than a third of them had an abnormal body mass, which indicates the presence of bad eating habits as a result of eating smaller quantities of healthy food or eating too much of it. Which indicates the importance of involving them in health awareness programs about healthy nutrition and ways to maintain a normal level of body mass.

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