EVALUATION OF THE NUTRITIONAL STATUS OF ADOLESCENT STUDENTS AT PREPARATORY SCHOOLS IN PORT SAIDCITY

Amal Ahmed Khalil[1], Hanaa Mohamed Nassar[2], Eman Abd Ellatif Mohamed Mohammed Salem[3]

[1]Professor of Pediatric Nursing, Faculty of Nursing, Port Said University.
[2]Lecturer of Pediatric Nursing, Faculty of Nursing, Port Said University.
[3]Bachelor of Nursing, Faculty of Nursing, Ain Shams University.

ABSTRACT

Background: Adolescence is a transitional period from childhood to adulthood, and it occupies a vital position in a person's life. nutrition of adolescents is important, where changes in growth and hormones, activity and food intake are found. Study aimed to evaluate nutritional status of the adolescence students at preparatory schools in Port Said city. **Design:** A descriptive research design was utilized. **Setting:** The study was conducted at Port Said preparatory schools. **Subjects:** stratified random sampling consisted of 390 adolescents whom selected from above mentioned settings. **Tools:** Data were collected using two tools; Structured Interview Questionnaire and Health Assessment sheet. **Results:** It showed that majority of adolescent students have satisfactory knowledge of carbohydrates/calories and balanced diet, and less than half of adolescent students report that the total scores of diet and eating habits are sufficient. **Conclusion:** two-thirds of adolescent students score satisfactory on diet and health knowledge, less than two-thirds of adolescent students are undernourished. Most adolescent students have a normal body mass index, while 3.6% of adolescent students are overweight. **Recommendations**: A health education program should be implemented for preparatory students to understand proper nutrition and health problems caused by insufficient dietary intake.

Keywords: Adolescent Nutritional status, Preparatory schools students, .

INTRODUCTION

Nutrition is consciously consuming sufficient, balanced, and suitable nutrients in accordance with the body's needs to sustain health and well-being throughout life. Adequate and balanced nutrition is getting enough of each nutrient and putting it to good use to help the body develop, rejuvenate, and function properly. As a result of anthropometric changes, teenage nutrition is critical for future health, including physical and biochemical growth, psychological and social development, and maturity (Ozdemir, 2016).

Adolescent nutritional needs change from those of childhood due to their growing size and the entrance of sexual maturity, and the nutritional demands of teenagers and adulthood differ due to the rapidly increasing metabolic needs (Katz & Friedman, 2015). This is a powerful anabolic era; the demand for all nutrients grows during adolescence; bone mass increases by 45 percent, reaching 20 percent of the adult's final height and 50 percent of the adult's weight (Gebremariam, Seid & Assefa, 2015).

The state of the body in terms of each nutrient, as well as general weight and condition, is referred to as nutritional status. Nutritional status is an important aspect in promoting health, disease prevention, and treatment (Friedman, Feldman, and Brandt, 2016). The nutritional status of a person is usually determined by two elements: external and internal influences. Food safety, cultural, social, and economic factors are examples of external factors, while internal factors include a person's age, gender, nutrition, behaviour, physical activity, and sickness (Upadhyay&Tripathi, 2017).

Adolescence is a time of human growth that occurs between childhood and maturity. It is also one of the most active. The body, brain, social interaction, and emotion all change dramatically during adolescence. These shifts, combined with adolescents' growing independence, desire for identity, attention to beauty, desire to be liked by peers, and active lifestyle, will have a considerable impact on food behaviour and nutritional status. Rapid physical growth necessitates increased energy and food consumption. (Navaneetha&Suvidha, 2016).

Puberty is defined by the World Health Organization (WHO) as the phase of human growth and development that occurs between the ages of 10 and 19. In today's world, there are 1.2 billion young people, roughly 90% of whom live in developing nations, and young people make up around 18% of the entire population. Population of the world (Sarkar, Manna, Sinha, Sarkar & Pradhan, 2015). Adolescents may no longer benefit from the same level of attention and care that children receive, or they may be

unable to seek adult-related protection (Omobuwa, Alebiosub, Olajide & Adebimpe, 2015).

Adolescents with a fast-growing mentality require adequate nutrition; nevertheless, adolescence is frequently a time when nutrition is neglected. High calorie and fat intake can result from skipping meals and snacks, as well as eating at fast food restaurants. Teenage boys and girls are more prone to eat fast food and drink non-weight-loss beverages (Mavilla & Huerta, 2013). Individuals, families, and society's dietary behaviour are all influenced by nutritional understanding (Demirozu, Pehlivan & Camliguney, 2012).

An anthropometric measurement and information on the client's medical history, clinical and biochemical characteristics, eating habits, current treatment, and food safety status are all part of the nutritional assessment (Friedman, Feldman, and Brandt, 2016). Anthropometry is a technique for assessing, classifying, and monitoring the nutritional state of people of various ages (including children and adolescents), as well as for detecting growth changes (Pimenta, Oliveira, Oliveira & Teixeira, 2017). The body mass index (BMI) has been recommended as a screening tool for overweight, obesity, and wasting in adults and adolescents (Omobuwa, Alebiosub, Olajide & Adebimpe, 2015).

Nurses can play an essential role in developing local and national policy that promotes and supports a healthy food environment. It's time for nurses to take the lead in enhancing the nutritional content of pupils' school meals. Adolescent health promotion is one of the responsibilities of community health nurses. Nutrition education consists of a variety of actions, including the dissemination of information, aimed at raising students' awareness of specific foods. Knowledge of why certain behaviours are advantageous influences their attitudes and beliefs, aids in the development of personal skills, and pushes kids to adopt healthy eating habits) Abd El-Rahman, Aly, and El-Bastawesy, 2013.

SIGNIFICANCE OF THE STUDY

According to data from the 2008 Egyptian health survey (DHS), the rate of overweight and obesity is increasing. Overweight children aged 10 to 19 make about 11% of the population. Obesity is prevalent among them, with 15 percent of males and 19 percent of women being obese. In addition to obesity and overnutrition, undernutrition is still a problem. According to World Health Organization figures from

2004, 10% of school-age children aged 5 to 17 are overweight or obese worldwide, and the condition is worsening (Tawfik, Ezelarab , Fahmy&Meky, 2015).

Nutritional status is an essential factor of many aspects of a young person's healthy development and scholastic success. It affects young people's attention spans, learning abilities, and ability to actively participate in the educational experience, in addition to their physical growth and maturity. Therefore, the results of this study will help nurses and health care professionals to find the nutritional problems that may be faced by adolescence early.

AIM OF THE STUDY

Assess nutritional status of adolescent students of t preparatory schools at Port Said City.

Objectives:

- Identify nutritional knowledge of preparatory school students.
- Identify dietary habits of preparatory school students.
- Assess nutritional status by body mass index.

SUBJECTS AND METHOD

Study Design:

A descriptive research design was utilized for the current study.

Study Settings:

The present study was conducted at Port Said city which was divided into six districts (el-shark, el-ganob, el-zhor, el-dwahi, el-mnakh, & el-arab,) one school was selected randomly from each sector. Then 65 students were taken from each school.

The names of the selected schools from each district were:

1-El Moushir Ahmed Ismail Preparatory school for girls (El-Shark district).

2-Port Said Preparatory school for girls (El-Arab district).

3-Saad Zaghloul Preparatory school for boys (el-mnakh district).

4-Alzohour preparatory school for girls (el-zhor district).

5-Hafez Ibrahim Preparatory school for boys (el-dwahi district).

6-Al-Kap Preparatory school for girls and boys (el-ganob district)

Study Subjects:

- The subjects of this study consisted of 390 students (Boys and girls) and were taken as 65 students from each school between (12-15) years selected by randomized sample method.

A total sample size: 389 students, but at the end of data collection they were 5 boys together and I can't choose four and leave one. so, collect from all, the sample size become 390.

Inclusion criteria:

- Aged of children from 12-15 years.
- Both sexes.

Exclusion criteria:

- Children having any chronic illness and disability.

Tools of Data Collection:

Two main tools were used in this study:

Tool (I) Structured Interview Questionnaire: It is developed by researchers to collect the required data: the tool consisted of three parts; **the first part** included questions related to socio-demographic characteristics, divided into questions related to students, such as age, gender, birth order, etc. ask questions related to the student's family, such as the age of the parents, education level, family size, etc.

The second part includes questions related to students' nutritional knowledge, which are divided into two categories. First: six multiple-choice questions, and students are required to choose the correct answers, such as the definition of a balanced diet and the importance of basic dietary elements...etc. Second: Open-ended questions. Students are required to write their knowledge and examples about the main food categories, many examples of basic nutrients and instructions for reducing body fat... etc.

The third part includes questions related to eating habits and practices, divided into questions that will be answered (always, sometimes and never), such as regular meals, snacks, sweets and candies... etc. Then the question asks students to recall the number of days they ate fruits, vegetables, fats and sugar...etc. ask about the food intake of the previous month, such as grains, vegetables, fruits, and fats...etc.

Tool (II) Health Assessment sheet (appendix); The tool is developed by researchers and is divided into two parts:

The first part (symptoms): Let students choose "yes or no" for the most common symptoms such as dizziness, headache, and abdominal pain.

The second part (physical assessment): Researchers examine each student's hair, face, nails, lips, tongue, gums, skin, teeth and other malnutrition symptoms, and then perform body measurements (weight and height measurement) to calculate body mass index.

II. Operational design:

Operational design of the present study includes the preparatory phase, tool content validity, pilot study, reliability, and fieldwork.

Preparatory phase:

It includes the use of books, articles, Internet magazines, and the use of websites as pumps, Cochrane, etc. to review literature, different studies and theoretical knowledge on various aspects of the subject.

Tool Validity

Content validity: used to modify the tool to determine whether the tool covers the target. The stage was developed by a jury of seven experts (nursing professors from each department of the School of Nursing, University of Port Said).

Test reliability: The test was conducted twice at two different time points. This reliability is used to evaluate the consistency of the test across time. We assume that there is no change in the quality or structure being measured, so we use the reliability of the test before the test. If the correlation between the individual management of the test is high, then it has good retest reliability, and the standard deviation under repeatability conditions is also part of the accuracy.

Pilot study:

The pilot study was conducted on 10% of the research sample, including (39) students who were randomly selected from the aforementioned schools. This is done to determine the relevance, clarity, and applicability of the tools developed, and to estimate the time required to fill out the questionnaire. Due to changes to the questionnaire, those students who shared in the pilot study were excluded from the main research sample, some of the questions were omitted and rephrased. Developed the final form of the tools and determined the time required to complete them.

Field Work

From November 2019 to February 2020, more than 4 months of data have been collected. Before conducting the research, the students were convinced that the data collected from the questionnaire would be kept confidential and no personal identity verification was required in any way. The students were told that they could refuse to participate or withdraw from the research at any time, and agreed to share or participate in the interview. It was carried out in a setting selected by the researcher, officially approved by the Education Bureau, and the head of the school was selected to conduct the research.

A clear explanation is given to the nature of the research and expected results. During the interview, the researcher began to collect data and explain the purpose of the research. The researcher interviews every five students together. The tool takes 20 minutes to complete. The anthropometric measurement requires 5 minutes for each student. Ten to fifteen students are interviewed every day. Depending on the situation of the students, each school was visited for four to five days. During the study period: girls are more cooperative than boys, some boys refuse to participate in the study for no reason, and some teachers help me control the students and collect data at any time during the day according to the daily class time.

Administrative design

Prior to conducting the research, formal permission from the dean of the School of Nursing and the Board of Education to the principal of the selected school in Port Said was obtained. After explaining its purpose, additional verbal consent was obtained from each student participating in the study.

Ethical consideration

Approval by the ethics committee of the School of Nursing by code number NVR(15\4\2019)(6); Port Said University, then explain the purpose of the research to the person in charge of the school who is approved to conduct the research, explain the purpose of the research to each student participating in the research to be allowed to participate, and be familiar with the importance of participation and explain the gains The information will be kept confidential, they are allowed to refuse to participate, and they are guaranteed that their information will only be used for research purposes.

Statistical analysis

▪ All collected data were organized, categorized, tabulated, entered, and analyzed by using SPSS, (Statistical Package for Social Sciences), soft-ware program version 21.

▪ Categorical variables were presented as numbers and percent and chi-square con between groups.

▪ Quantitative variables were presented as mean and standard deviation.

RESULTS

Table (1): shows that 59% of the adolescent students aged 14+ years old with Mean±SD age of 13.8±1.1. Also, the same table revealed that, 55.4% of the adolescent students were female and 95.6% of them reported having siblings. Concerning birth order of the adolescent students, 57.4% stated that they were 2 and more with Mean±SD of 1.9±1.1.

Table (2): Mothers of adolescent students from 40 to less than 50 years accounted for 37.9%, and Mean±SD was 42.1±6.0. In addition, the survey results clarified that 68.5% of teenage students' mothers have received basic/intermediate education, and 64.4% are working. Regarding the age of the father of adolescent students, it is noted that 37.5% of the people are under 45, with an average ± standard deviation of 46.1 ± 5.5. In addition, the table also shows that 59.9% of teenage students have fathers who have received basic/intermediate education, and 58.1% of them are employees.

Table (3): Shows that 63.6% of adolescent students had satisfactory dietary knowledge while 36.4% of adolescent students had satisfactory dietary knowledge had unsatisfactory dietary knowledge.

Figure (1): demonstrates that 85.9% of adolescent students had satisfactory knowledge about carbohydrates/calories and balanced meal respectively. In addition, the same figure shows that 36.4% of adolescent students had satisfactory knowledge about fat.

Table (4): Shows total nutrition practices reported by adolescent students. As stated in the table, 49.2% and 30.3% of adolescent students reported that the total

scores for diet and eating habits were adequate. In addition, the survey results show that 62.6% of adolescent students have insufficient total nutrition.

Table (5): shows the symptoms related to nutrition deficiency as reported by adolescent students. The table indicated that, two thirds (67.9%) of the adolescent students reported headache is the most frequent symptom of nutrition deficiency, whilst 22.3% said that vomiting is the symptom related to nutrition deficiency. Also, the results showed that, 85.6% of the adolescent students reported at least 1 symptom associated with nutrition deficiency.

Table (6): displays the physical signs related to nutrition as observed in adolescent students. As obvious in the table, 92.5%, 58.2%, 91.1%, 81.2%, 77.6% and 100%of the adolescent students reported that thin hair, acne, dryness of the lips, dental caries, long nails, skin dryness and tender muscle were the most observed physical signs related to nutrition deficiency respectively.

Table (7): Shows the anthropometric data of adolescent students. It is worth noting that the weight range of adolescent students is 37.0-61.0 kg, the mean ± standard deviation is 49.1 ± 4.6 kg, and the median is 50.0 kg. Regarding the height of young students, the range is 137.0-170.0 cm, the mean ± standard deviation is 157.5 ± 5.4 cm, and the median is 159.0 cm. In addition, the survey results show that 96.4% of adolescent students have a normal body mass index.

Table (8): Shows that there is no statistical coefficient correlation between the total scores of knowledge and practice of young students.

Table (1): Socio-demographic characteristics of adolescent students in the study sample (n=390).

	Frequency	Percent
Age:		
14>12-	160	41.0
14+	230	59.0
Range	12.0-15.0	
Mean ± SD	13.8±1.1	
Gender:		
Male	174	44.6
Female	216	55.4
Havesiblings:		
Yes	373	95.6
No	17	4.4
Birthorder:		
1	166	42.6
2+	224	57.4
Range	1.0-11.0	
Mean±SD	1.9±1.1	
Median	2.00	

Table(2): Parents' characteristics of adolescent students in the study sample(n=390).

	Frequency	Percent
Mother age:		
<40	127	32.6
40-	148	37.9
45+	115	29.5
Range	30.0-57.0	
Mean ± SD	42.1±6.0	
Median	42	
Mother education:		
Illiterate	11	2.8
Basic/Intermediate	267	68.5
University	112	28.7
Mother job:		
Housewife	139	35.6
Working	251	64.4
Father age:		
<45	145	37.5
45-	144	37.2
50+	98	25.3
Range	32.0-62.0	
Mean± SD	46.1±5.5	
Median	46	
Father education:		
Illiterate	17	4.4
Basic/Intermediate	232	59.9
University	138	35.7
Father job:		
Employee	225	58.1
Worker	155	40.1
Retired/unemployed	7	1.8

Table (3): Adolescent students' total dietary knowledge (n=390)

Satisfactory	248	63.6
Unsatisfactory	142	36.4

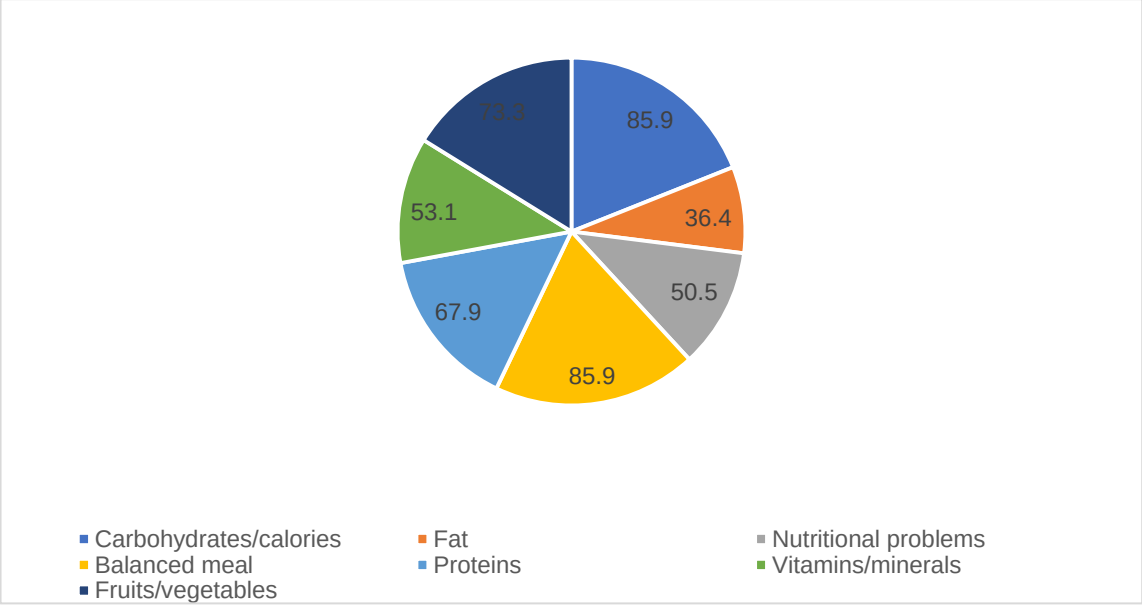

Figure (1): Adolescent students' satisfactory knowledge

Table (4): Adolescent students' total reported nutritional practice (n=390)

	Frequency	Percent
Adequate (60%+) practice of:		
Dietary habits	192	49.2
Eating habits	118	30.3
Total nutritional practices:		
Adequate	146	37.4
Inadequate	244	62.6

Table (5): Symptoms related to nutrition deficiency as reported by adolescent students (n=390)

Symptoms	Frequency (>once)	Percent
Dizziness	186	47.7
Headache	265	67.9
Loss of appetite	173	44.4
Colic	229	58.7
Distension	92	23.6
Heartburn	118	30.3
Constipation	173	44.4
Vomiting	87	22.3
Diarrhea	154	39.5
Teeth problems	230	59.0
Fatigue	238	61.0
Hair loss	151	38.7
Skin problems	90	23.1
Total:		
At least 1 symptom	334	85.6
No symptoms	56	14.4
Range	0-13	
Mean± SD	5.6±2.8	
Median	5.0	

Table (6): Physical signs related to nutrition deficiency as observed in adolescent students (n=390)

Abnormal physical signs	Frequency	Percent
Hair:	40	10.3
Alopecia	0	0
Thin	37	92.5
Cracked	5	12.5
No luster	0	0
Lice	0	0
Face:	55	14.1
Pale	29	52.7
Acne	32	58.2
Eyes:	0	0
Lips:	56	14.4
Pallor	31	55.4
Dryness	51	91.1
Cracking	1	1.8
Angular stomatitis	0	0
Tongue:	1	0.3
Pallor	1	0.3
Gums:	1	0.3
Pallor	1	0.3
Teeth:	227	58.2
Caries	225	81.2
Lost teeth	71	25.6
Nails:	85	21.8
Long	66	77.6
Unclean	56	65.9
Pale	1	1.2
Skin:	91	23.3
Dryness	91	100
Cracking	1	1.1
Inflammations	4	4.4
Muscles:	0	
Abdomen:	3	0.8
Tender	3	100
Total:		
At least 1 abnormal sign	248	63.6
No abnormal signs	142	36.4
Range	1.4±1.6	
Mean±SD	0-7	
Median	1	

Table (7): Anthropometric measurements of adolescent students (n=390)

Anthropometric measurements	**Frequency**	**Percent**
Weight (Kg):		
Range	37.0-61.0	
Mean± SD	49.1±4.6	
Median	50	
Height(cm):		
Range	137.0-170.0	
Mean± SD	157.5±5.4	
Median	159	
BMI (percentile):		
Normal	376	96.4
Overweight	14	3.6

Table (8): Correlation matrix of the scores of knowledge and practice (n=390).

	Spearman's rank correlation coefficient	
	Knowledge Score	Practice Score
Knowledge score	1	
Practice score	-0.099	1

DISCUSSION

Adolescence is a critical time of development since it marks the transition from childhood to adulthood, spanning the ages of 10 to 19. Dietary patterns have a significant impact on long-term nutritional status and health at this key period. The increased dietary requirements at this time are due to the fact that teenagers have gained up to 50% of an adult's weight, more than 20% of an adult's height, and 50% of an adult's bone mass during this time. Adolescents, on the other hand, confront a slew of major nutritional issues that wreak havoc on their rapid growth and adult health (WHO, 2021).

The main nutritional problems affecting the global adolescent population include undernutrition (stunting and wasting), overweight and obesity. These are all emerging public health problems during this period. Worldwide, 10% of adolescents are overweight, and the prevalence of obesity is between 2-3%. The global average reflects prevalence rates ranging from 10% in Africa and Asia to more than 20% in the United States and Europe (Dukhi, 2020).

Nutritional and epidemiological changes have their own consequences on diet and activity patterns, resulting in the development of a double burden of malnutrition. Chronic diseases have emerged as a major new health issue as a result of changes in nutritional consumption, as well as increasingly sedentary lifestyles driven by food markets, globalisation, and expanding urbanisation (Bishwajit, 2015).

People's comprehension of the double burden problem and how to best manage it is limited because adolescents receive little attention. The World Health Organization's (WHO) Child and Adolescent Growth Reference, which was recently produced, simplifies the problem and is now used to measure thinness (low BMI for age), overweight and obesity (high BMI for age), and developmental delay (height for low age) (WHO, 2021). As a result, the purpose of this research is to assess the nutritional state of young pupils at Port Said City Preparatory School.

In terms of adolescent dietary knowledge, the results of the same period of research show that nearly two-thirds of young students are satisfied with the total score of the diet plan. This could be due to the high use of computers and mobile phones by young students via the Internet, which helps them understand everything related to diet

and all other life activities and practices, and the fact that most of their parents are highly educated, which helps to provide their children with some information and awareness about their own diet.

It could also be because the school's job is to teach some courses for kids at this age that include essential knowledge on diet, such as science and biology, as well as increasing the awareness of adolescent student's about the diet through the initiative of honorable President of the Arab Republic of Egypt - Abdel-fatah Alsisi to detect diseases like malnutrition, obesity, and thinness, which can be a powerful motivator for students to study and understand raise awareness among young students about diet.

This finding was supported by Abd El-Rahman, Aly & EL-Bastawesy (2013***)*** who conducted a study, indicated that most of the studied students had good dietary knowledge

Furthermore, Hassanien, Abd El-Aziz, and Afifi (2017) who mentioned that more than half of the students in an Egyptian study have a decent awareness of optimal nutrition and eating regimens. Furthermore, according to Ateya, Fouad, Abd El-Wahid, and Younes (2016), most students have an acceptable degree of understanding regarding optimal nutrition.

According to the findings, slightly less than two-thirds of adolescent students have inadequate total nutrition, two-thirds of adolescent students report an unbalanced diet across all food groups, and three-quarters of adolescent students have unhealthy diets (>1/week). This may be due to the fact that they are away from home for an extended period of time, where they may attend school for more than eight hours, in addition to private lessons, they require a significant amount of time, so they resort to fast food, and the high employment rate between mother and father, which has had a significant impact on this approach.

This study supports Fouda, Elsabbour, and Ali's (2019) conclusion that most students' eating habits are unsatisfactory and inadequate, with the majority of students reporting that they do not consume all food groups. A well-balanced diet, and the majority of them eat an unhealthy diet. Despite the fact that Ateya et al. (2016) found that most students' practice levels were good, female students reported higher levels of

practice than male students. Furthermore, Abd El-Rahman et al. (2013) who reported that three-quarters of the participants have good eating habits. Furthermore, the research demonstrates that most students' nutritional habits and practices are reasonable.

Concerning the symptoms of nutritional deficiencies reported by adolescent pupils, two-thirds of students said headaches were the most prevalent symptom, and one-fifth said vomiting was a symptom of nutritional deficiencies. Furthermore, the findings revealed that the majority of adolescent students reported at least one symptom of nutritional deficiency, which is considered a sign of malnutrition, and that these students had an unbalanced diet, skipped breakfast, ate too many sweets and candies, and had irregular meals. It could also be the outcome of adolescent pupils' stress and emotional upheavals at this period of their lives.

This finding is in line with a study on teenage growth and development conducted by Staley (2019). The most prevalent issues among teenage pupils were headache, constipation, anorexia, vomiting, indigestion, and abdominal distension. Furthermore, headaches in children and adolescents regularly impair school and social activities, as well as parents' work performance, according to Nieswand Richter et al (2019).who reported that Cough and cold, on the other hand, were reported as the most common symptoms of Egyptian teenagers by the WHO (2021), followed by gastrointestinal issues.

Thinning hair, acne, dry lips, tooth decay, long nails, dry skin, and muscular suppleness were among the indications associated with dietary inadequacies reported by most adolescent pupils. It is a case of malnutrition. This can be due to a variety of factors, but the most important is that teenagers typically cut their vitamin (particularly A and C) and mineral (notably iron and calcium) intake, as well as engage in excessive physical activity. Increase your intake of sweets, soft drinks, and snacks. Furthermore,

teenagers prefer starchy and carbohydrate-rich foods like bread, Macron, and potatoes to protein-rich foods like meat, fish, milk, and dairy products. Furthermore, high refined sugar content and mineral deficiencies are two of the most prevalent hormonal changes during adolescence.

El-Sahar and Sopeah (2019) did mentioned that tooth loss was the most common clinical symptom in the sample, followed by white spots and stuttering in the nails in one-fifth of the pupils, and bleeding from the gums in five percent of the students. The results of the anthropometric measures of adolescent students showed that the body mass index of the adolescent students was normal, this could be owing to young students' high levels of contentment with their nutritional status and eating habits, as well as their parents' education; socioeconomic position has a direct impact on a student's lifestyle.

This finding is consistent with ElRazkey, Amin, and Boshra (2017) who mentioned that in their study, which showed that the proportion of normal body mass index was the highest in the study group, while the proportion of overweight and underweight was the lowest. Similarly, Mohammed, Ibrahim, Hagag, and Mohamed (2018) showed in research that more than half of adolescent students have a normal body mass index.

Furthermore, the study's findings revealed that 3.6 percent of adolescent students are overweight. This could be owing to the high prevalence of poor diets revealed in the study, with the majority of participants eating fried foods and drinking high-sugar beverages. More than half of the population consumes high-sugar, high-salt, and high-fat foods, as well as excessive amounts of drink, fast food, and junk food, resulting in obesity. Talat and El Shahat (2016) who conducted a study and found that the prevalence of overweight and obesity among 12-15 year-old adolescents in Sharkia province cities is linked to low parental education, skipping breakfast, snacking, fast

food consumption, watching TV for more than two hours per day, and eating while watching TV.

The findings reveal a statistically significant link between adolescent students' nutritional awareness and their age, having siblings, school grade, possessing a computer, and using mobile Internet. These findings explain why the more knowledge and information about diet older children have when they are in high school, have siblings, and have access to computers with internet access. This finding is in line with Sharma, Akhtar, Singh, and Mehra's (2019) who mentioned in the study, demonstrating that there is a substantial association between the age of young pupils, their educational levels, and their computer connection to the Internet and their total knowledge scores. Furthermore, Kvrak and Altn (2018) found statistically significant variations in the number of siblings and educational status of teenage pupils (P0.05) in their study.

Furthermore, the findings show that there is a statistically significant link between adolescent nutritional behaviors and their parents' age and crowding index. Ateya et al. (2016) disagreed with this conclusion, finding that the age and education level of parents had no bearing on their adolescent kids' nutritional habits. Furthermore, the findings reveal that there is no correlation coefficient between adolescent students' overall knowledge scores and their total practice scores. This finding indicates that while young kids may have a lot of information and knowledge about adequate healthy nutrition, they may not use it on a personal level and engage in harmful and unhealthy behaviors. Environment, habits, traditions, education, and upbringing may all play a role in this, as they may have an adverse effect on young people's practice and behavior.

These findings are in line with those of Shaziman et al. (2017) According to a study, there is no substantial association between nutritional knowledge and practice. Furthermore, Hassanien et al. (2017) who reported that in terms of nutritional status and diet plan, there is a positive association between total knowledge and total attitude scores of teenage pupils, but no statistically significant correlation between total knowledge and total practice scores.

CONCLUSION

According to the results of this study, it can be concluded that two-thirds of adolescent students are satisfied with the total scores of dietary knowledges, less than two-thirds of adolescent students have insufficient overall nutrition practice, and two-thirds of adolescent students report no all-food groups have a balanced diet. Most adolescent students report thinning hair, acne, dry lips, tooth decay, long nails, dry skin and soft muscles, respectively, related to nutritional deficiencies Related to the most frequently observed signs, most adolescent students have a normal body mass index.

RECOMMENDATIONS

In the light of the results of the present study, the following recommendations are suggeste*d:*

1- A health education program should be implemented for preparatory students to understand the importance of proper nutrition and identify health problems caused by insufficient dietary intake.

2- Initiate school media programs (such as wall magazines and school broadcasts) to show the basic guidelines, importance, main ingredients, and effects of insufficient nutrition intake.

3. Regularly screen students to detect any nutritional problems as early as possible.

4. The school health team should organize mother classes to improve the dietary knowledge of student mothers, teach them how to adjust their budgets, eat a balanced diet, and how to arrange their son's time to avoid busy time, thereby hindering the consumption of healthy eating.

Conflict of Interest

The authors haven’t any conflicts of interest .

Funding Sources

No funding was received.

REFERENCES:

Abd El-Rahman, S., Aly,S.,&El-Bastawesy, S**.** (2013). Assessment of nutritional status among preparatory school girls in Talkha City. The Egyptian Journal of Hospital Medicine; 52(1): 493-505.

Ateya, E., Fouad, N., Abd El-Wahid,H., and Younes., M. (2016).Knowledge

Attitude and Reported Practices toward Optimal Nutrition among Preparatory School Students. Port Said Scientific Journal of Nursing; 3(2): 26-43.

Bishwajit G. (2015). Nutrition transition in South Asia: the emergence of non-communicable chronic diseases. F1000Research, 4, 8. https://doi.org/10.12688/f1000research.5732.2

Demirozu,B., Pehlivan,A.,&Camliguney,A.(2012). Nutrition knowledge and behaviors of children aged 8-12 who attend sport schools, Procedia - Social and Behavioral Sciences; 46(5): 4713 717.

Dukhi. N. (2020). Global prevalence of malnutrition: evidence from literature. Health Sciences journal; 7(2): 12-22. DOI: 10.5772/intechopen.92006.

ElRazkey, J., M. Amin, F., Y. Boshra, A. (2017). Body mass index, health related Behaviors and obesity among female adolescent students. Egyptian Journal of Health Care, 8(1): 314-329. doi: 10.21608/ejhc.2017.23166

El-Sahar, E. and Sopeah, H. (2019) Assessment of nutritional Status and Signs of Growth among Bullying School Children. Psychology, **10**, 1908-1922. doi: 10.4236/psych.2019.1014123.

Friedman, L., Feldman, M., Brandt,L.(2016).Modul Nutrition Assessment and Classification, version2, 9th ed, Washington: Sundara Co., 96:1008-1013.

Fouda,A., Elsabbour,M., Ali,M. (2019). Eating habits and self-efficacy among adolescents, Port Said, Egypt. Port Said Scientific Journal of Nursing; 4(2): 21-33.

Gebremariam,H., O,Seid., Assefa,H. (2015).Assessment of nutritional status and associated factors among school going adolescents of Mekelle City, Northern Ethiopia.International Journal of Nutrition and Food Sciences; 4(1): 118-124.

Hassanien,G Abd El-Aziz,M Afifi,H. (2017). Adolescence guideline regarding healthy nutritional requirement for preparatory school students. Menoufia Nursing Journal Faculty of Nursing Menoufia University; 2(1): 1-8.

Katz,D.,&Friedman,R. (2015).Nutrition in clinical practice, (3rd edition), library of congress cataloging,china;408-413.

Kıvrak, O and Altın, M. (2018). Nutrition knowledge and attitude change of students studying in state and private secondary and preparatory schools. Journal of Education and Training Studies 6 (6): 63-69.

Mavilla,J., Huerta,C. (2013).Health Promotion in Nursing,3rd ed , , United states of America; librayy of Cogress Co.,226-377.

Mohammed, A., Ibrahim, M., Hagag., S., and Mohamed., H. (2018). Obesity and self-esteem among school adolescent students, Alexandria City, Egypt. The Egyptian Journal of Community Medicine 37 (3):16-24.

Navaneetha, R.,& Suvidha,A. (2016). Assessment of Nutritional Status of Regular Adolescent Swimmers (13-18 Years). Journal of Nutrition Science Research; 84(9):1-114.

Nieswand, V., Richter, M., Berner, R., von der Hagen, M., Klimova, A., Roeder, I., Koch, T., Sabatowski, R., & Gossrau, G. (2019). Prevalence of headache in German pupils of different ages and schoo ltypes. Cephalalgia, 39(8):10301040. https://doi.org/10.1177/0333102419837156

Omobuwa,O., Alebiosub,C.,Olajide,F.,&Adebimpe,W. (2015):Assessment of nutritional status of in-school adolescents in Ibadan, Nigeria:South African Family Practice;56(4):246-250.

Ozdemir,A.(2016).Macronutrients in Adolescence, International Journal of Caring Sciences, Bursa, Turkey; 9(2):1162.

Pimenta,F., Oliveira,C., Oliveira,W.,&Teixeira,H.(2017).Agreement between the methods: Subjective Global Nutritional Assessment and the nutritional assessmentof the World Health Organization, Jornal de Pediatria;94(6):604.

Sharma,S., Akhtar,F., Singh, R.,Mehra,S. (2019). Relationships between nutrition-related knowledge, attitude, and self-efficacy among adolescents, Journal of Family Medicine and Primary Care: June 2019 - Volume 8 - Issue 6 - p 2012-2016 doi: 10.4103/jfmpc.jfmpc_217_19

Sarkar,M.,Manna,N.,Sinha,S.,Sarkar,S.,&Pradhan,U. (2015).Eating habits and nutritional status among adolescent schoolgirls: an experience from rural area of West Bengal,Journal of Dental and Medical Sciences; 14(12): 6-12.

Shaziman, S., Rani, M., Aripin, K., Nazefah Abdul Hamid, N., et al. (2017). Assessing Nutritional Knowledge, Attitudes and Practices and Body Mass Index of Adolescent Residents of Orphanage Institutions in Selangor and Malacca. Pakistan Journal of Nutrition, 16: 406-411.

Staley, L. (2019). The promise and challenges of intensive longitudinal designs for imbalance models of adolescent substance use. Frontiers in Psychology, 9(1). https://doi.org/10.3389/fpsyg.2018.01576

Talat. M and El Shahat., E. (2016). Prevalence of overweight and obesity among preparatory school adolescents in Urban Sharkia Governorate, Egypt. The Egyptian Pediatric Association 64(1)20-25.

Tawfik,S.,Ezelarab,H., Fahmy,W.,&Meky,F.(2015). Evaluation of Nutrition Education Program among Egyptian Adolescents School Children (11-14 years old). The Egyptian Journal of Community Medicine, Cairo – Egypt;33(12):930.

Upadhyay, R,. Tripathi,D. (2017).How Can We Assess the Nutritional Status of an Individual,Journal of Nutrition & Food Sciences; 7(6): 640.

World Health Organization (WHO) (2021). Adolescence health. https://www.who.int/health-topics/adolescent-health

تقييم الحالة الغذائيه للمراهقين بالمدارس الإعدادية بمدينة بورسعيد

أمل أحمد خليل [1] ، هناء محمد نصار [2] ، إيمان عبد اللطيف محمد محمد سالم [3]

استاذ تمريض الاطفال بكلية التمريض جامعة بورسعيد[1]

مدرس تمريض الأطفال بكلية التمريض جامعة بورسعيد[2]

بكالوريوس تمريض كلية التمريض جامعة عين شمس[3]

الـخـلاصــة

الخلفية: المراهقة هي فترة انتقالية من الطفولة إلى البلوغ ، وتحتل مكانة حيوية في حياة الإنسان. تعتبر تغذية المراهقين مهمة ، حيث توجد تغييرات في النمو والهرمونات والنشاط وتناول الطعام. الهدف: هدفت هذه الدراسة إلى تقييم الحاله الغذائيه للمراهقين بالمدارس الإعدادية بمدينة بورسعيد. التصميم: تم استخدام تصميم بحث وصفي ، الموقع: أجريت الدراسة في مدارس بورسعيد الإعدادية. المواضيع: العينة العشوائية العنقودية الطبقية تتكون من 390 مراهقًا تم اختيارهم من المدارس المذكورة أعلاه. الأدوات: تم جمع البيانات باستخدام أداتين ؛ استمارة مقابلة منظمة وورقة التقييم الصحي. النتائج: أظهرت أن غالبية الطلاب المراهقين لديهم معرفة مرضية بالكربوهيدرات / السعرات الحرارية ونظام غذائي متوازن ، وأقل من نصف الطلاب المراهقين أفادوا بأن مجموع درجات النظام الغذائي وعادات الأكل كافية. الاستنتاج: ثلثا الطلاب المراهقين يسجلون درجات مرضية في النظام الغذائي والمعرفة الصحية ، وأقل من ثلثي الطلاب المراهقين يعانون من سوء التغذية. يمتلك معظم الطلاب المراهقين مؤشر كتلة جسم طبيعي ، بينما يعاني 3.6٪ من الطلاب المراهقين من زيادة الوزن. التوصيات: يجب تنفيذ برنامج التثقيف الصحي لطلاب المرحلة الإعدادية لفهم التغذية السليمة والمشكلات الصحية الناجمة عن عدم كفاية المدخول الغذائي.

الكلمات المرشدة : الطلاب المراهقون ، الحالة الغذائيه ، المدارس الإعدادية.