Food Habits, Eating Behavior, and Nutritional Knowledge of High School Female Students

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Abstract
Background: The lag between childhood and maturity known as adolescence is marked by physical, psychological, and social changes (Liao et al., 2015; Pender et al., 2015). Adolescents go through this crucial stage of development where they learn life skills, pick up healthy habits, and have more control over their health. Adolescents' health and wellbeing throughout life, as well as their life expectancy, are impacted by their health behaviors. Objectives: The aim of this study is to assess the food habits, eating behavior, and nutritional knowledge of high school female students. Methodology: The descriptive correlational design, sometimes referred to as the simple correlational design, is a subtype of correlational study whose main goal is to analyze relationships between and among variables. Results: The study results exhibit that the clear majority have poor nutritional knowledge (n = 378; 98.4%), followed by those who have fair knowledge (n = 6; 1.6%). Concerning knowledge about food safety, most have poor knowledge (n = 268; 69.8%), followed by those who have fair knowledge (n = 112; 29.2%), and those who have good knowledge (n = 4; 1.0%). Regarding the knowledge about food safety and behavior, the clear majority have fair knowledge (n = 359; 93.5%), followed by those who have poor knowledge (n = 21; 5.5%), and those who have good knowledge (n = 4; 1.0%). Conclusion: Most students include in their meal patters junk food and refrain from healthful foods. The majority are used to high-calory diet. The vast majority reported that they never eat fruit and vegetable every day. Recommendations: There is a need for the community health nurses to establish community-based interventions that aim to raise students' health awareness of the meal patters, high-calory diet, eating fruits and vegetables, healthful proteins, deleterious effects of added sugar, fast food, eat breakfast, and drinking soft drinks.
Keywords: Food Habits, Eating Behavior, Nutritional Knowledge, High School Female Students.

1. Introduction

The interval between childhood and adulthood is known as adolescence. This reflects both the adolescent's developing eating habits as well as the physical and emotional changes they are going through. Adolescents may use food to demonstrate their independence, but not always in a healthy way, as younger children may reject novel foods (i.e., neophobia) (Caballero, 2013).
The lag between childhood and maturity known as adolescence is marked by physical, psychological, and social changes (Liao et al., 2015; Pender et al., 2015). Adolescents go through this crucial stage of development where they learn life skills, pick up healthy habits, and have more control over their health. Adolescents' health and wellbeing throughout life, as well as their life expectancy, are impacted by their health behaviors. (Klinker et al., 2020; Liao et al., 2015). The gathering of epidemiological dietary data is a vital, albeit indirect, method for population nutritional surveillance. Chronic degenerative diseases like cardiovascular problems, diabetes, and cancer are increasingly linked to bad nutrition and inactivity (Keys, 1986; Liu et al, 2001; Muller et al, 1999; Ulbricht & Southgate, 1991; World Health Organization [WHO], 1990).
Additionally, it has been acknowledged that a healthy lifestyle, sufficient diet, and health education all contribute to better health (Gracey et al, 1996; Povey et al, 1998; Sorensen et al, 1998; Larkey et al, 1999; Anesbury et al, 2000).

2. Methodology

Study Design

The descriptive correlational design, sometimes referred to as the simple correlational design, is a subtype of correlational study whose main goal is to analyze relationships between and among variables.

The Setting of the Study

The study was conducted in Baghdad City's public high schools' female students.

Sample and Sampling

A simple random sample of female high school students who agreed to take part in the study was included in it. The study subjects were recruited from eight public high schools.
The student researcher obtained the list of students enrolled in the selected schools and cut each student's name in identical piece of paper with folding them in the same way. The student researcher put the students' names in each school in an independent container in order to draw proportionate number of students from each school. The student research stirred well these papers and draw a piece of paper alternatively till obtaining the required proportion.
The sample size calculation using G*Power software considered the parameters of an effect size 0.25 (medium effect size), A power of 0.95, five groups, and an alpha error probability of 0.05. Thus, the

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recommended sample size would be 305. If there were a 20% attrition rate, 61 more participants would be needed. So, 366 would be the suggested sample size. The total number of samples is 384.

Inclusion Criteria

The study subjects were recruited to involved in this study based on the criteria of high public schools and those who do not experience any physical disability.

Exclusion Criteria

The exclusion criteria include students at private schools and those who are experiencing any physical disability.

The Study Instrument

The sociodemographic characteristics consists the first part of the study instrument consists of subjects' of age, gender, grade, students' living arrangement, the family's socioeconomic status was determined by the 2016 revisions of the Kuppuswamy and B. G. Prasad socioeconomic scales (Shaikh & Pathak, 2017) which encompasses parents' level of education which consists of 10 level (10 points for each of the parents), household's occupation which consists of seven levels; the seventh level takes 10 points, and family's monthly income which includes six categories; the highest or sixth category takes 10 points.

Data collection

A self-reported instrument was used for data collection for the period from February 24th, 2021, to March 31st, 2022.

3. Statistical Analyses

Data were analyzed using the statistical package for social science (SPSS) for Windows version 28. The student's researcher utilized statistical measures included linear regression, one-way analysis of variance (ANOVA), independent-sample t-test, frequency, percent, mean, and standard deviation,

Ethical Considerations

The student researcher presented the study's findings to the administration of the schools after gaining consent from the College of Nursing, University of Baghdad, for the investigation.

To ensure that the study subjects understood that participation was voluntary and that they might withdraw at any moment, the student researcher explained the broad goal of the study and how they could respond to the study instrument to them. The student researcher gave participants his word that he would securely keep and uphold the confidentiality of their information both during and after study participation.

The student researcher gave study participants additional assurances that he would protect their anonymity in the presentation, reporting, and/or any potential study publications.

4. Results of the Study

Table 1 Participants' sociodemographic characteristics (N = 384).

Variable	Frequency	Percent
Age (Years)		
16	99	25.7
17	173	45.1
18	74	19.3
19	38	9.9
Mean (SD): 17.13 ± 0.91		
Grade		*
Fourth	128	33.3
Fifth	128	33.3
Sixth	128	33.3
Living Arrangement		
Live with parents	314	81.7
Live with mother	51	13.3
Live with father	8	2.1
Live with relatives	6	1.6
Other	5	1.3
Socioeconomic Class		
Lower class	2	0.5
Upper lower class	151	39.3
Lower middle class	122	31.8
Upper middle class	100	26.1
Upper class	9	2.3
* Percent is not exactly 100.0%		

The study results reveal that mean of age is 17.13 ± 0.91; less than a half age 17-years (n = 173; 45.1%), followed by those who age 16-years (n = 99; 25.7%), those who age 18-years (n = 74; 19.3%), and those who age 19-years (n = 38; 9.9%).

Concerning the grade, an equal number was drawn from each grade (n = 128; 33.3%).

Regarding the living arrangement, the majority reported that they have been living with their parents (n = 314; 81.7%), followed by those who live with their mothers (n = 51; 13.3%), those who live with their fathers (n = 8; 2.1%), those who live with their relatives (n = 6; 1.6%), and those who have other living conditions (n = 5; 1.3%).

With respect to the socioeconomic class, around two fifth are classified as of upper lower class (n = 155; 39.3%), followed by those who are of lower middle class (n = 122; 31.8%), upper middle class (n = 100; 26.1%), upper class (n = 9; 2.3%), and lower class (n = 2; 0.5%).

Table 3 Participants' knowledge

Level	Frequency	Percent
Nutritional Knowledge		
Poor	378	98.4
Fair	6	1.6
Knowledge about Food Safety		
Poor	268	69.8
Fair	112	29.2
Good	4	1.0
Knowledge about Food safety and behavior		
Poor	21	5.5
Fair	359	93.5
Good	4	1.0

The study results exhibit that the clear majority have

poor nutritional knowledge (n = 378; 98.4%), followed by those who have fair knowledge (n = 6; 1.6%).

Concerning knowledge about food safety, most have poor knowledge (n = 268; 69.8%), followed by those who have fair knowledge (n = 112; 29.2%), and those who have good knowledge (n = 4; 1.0%).

Regarding the knowledge about food safety and behavior, the clear majority have fair knowledge (n = 359; 93.5%), followed by those who have poor knowledge (n = 21; 5.5%), and those who have good knowledge (n = 4; 1.0%).

5. Discussion

This descriptive correlational study aimed mainly to assess the nutrition-related knowledge and knowledge about food safety of high school female student and to identify the correlation between students' age, body mass index, families' socioeconomic status, and their physical activity and lifestyle, healthy and unhealthy diet and food, Self-Efficacy, barriers to change, nutrition knowledge, food safety knowledge, and food safety and behavior in hygiene practices.

The study results reveal that most of participants don't regularly consume yogurt, milk, coffee, or cappuccinos. This finding could be attributed to either students or their mothers do not have the sound health awareness of the that make students adhere to drink milk/milk and coffee/cappuccino or eat yogurt every day.

The majority reported that they eat pasta/rice/bread/potatoes every day. This finding can be explained as that do not comprehend the disadvantages of excess carbohydrates.

Most reported that they never consume milk/milk and coffee/cappuccino/yogurt for one week. This finding could be explained as that either students are unaware of the potential values of milk and coffee, or their family dietary pattern do not consider including them as essential elements.

Most reported that they eat 1-2 portions (250 g, cooked and dressed) of pasta/rice/bread/potatoes every day. This finding could reflect the students' poor awareness of the dietary reference intake of these foods. One more possible explanation is the shift in dietary patterns that Iraq witnesses within the last two decades toward the fast and junk foods and the role of advertisements for these foods. Moreno et al. (2010) demonstrated that key changes in adolescents' lifestyle have been noticed internationally in the last decades which result in considerable changes in dietary patterns and food consumption, with variances observed among countries and age groups.

The globalization and urbanization have rendered dietary patterns characterized by a swift raise in consuming highly processed/energy-dense foods that are poor in nutritional value as well as ready-to-eat products which in turn contribute to deteriorating the dietary habits, particularly among youths (Adair & Popkin, 2005; Moreno et al., 2010).

The vast majority reported that they never eat fruit and vegetable every day. This finding could reflect the poor awareness of either students themselves or their parents in terms of not eating fruit and vegetable every day as they could not recognize their value for their own health. This finding is consistent with that obtained by Rosi et al. (2019) who stated that average fruit and vegetable consumption was remarkably less than the daily recommended intake of 400 g or five servings. Even though eating the prescribed amounts of fruits and vegetables has several health benefits, some of which are widely known and include a lower chance of developing chronic non-communicable diseases like cancer, cardiovascular disease, and stroke as well as earlier death (Aune et al., 2017; Miller et al., 2017; Yip et al., 2019). However, most children, teenagers, and adults in the US do not consume enough fruit and vegetables to promote health and prevent chronic disease (2 and 2.5 cup-equivalents, respectively, for an adult consuming 2000 calories per day, according to the Dietary Guidelines for Americans 2015-2020) (U.S. Department of Health and Human Services, 2015). Only 12.2 and 9.3% of US adults met the recommended fruit and vegetable intake targets, respectively, despite increased awareness of the health benefits of eating these foods. Young adults ages 18 to 30 have the lowest prevalence of meeting the fruit (9.2%) and vegetable (6.7%) intake recommendations.

The study results exhibit that the clear majority have poor nutritional knowledge, followed by those who have fair knowledge. Concerning knowledge about food safety, most have poor knowledge, followed by those who have fair knowledge, and those who have good knowledge. Regarding the knowledge about food safety and behavior, the clear majority have fair knowledge, followed by those who have poor knowledge, and those who have good knowledge.

6. Discussion

Most students include in their meal patters junk food and refrain from healthful foods. The majority are used to high-calory diet. The vast majority reported that they never eat fruit and vegetable every day. More than a half lack the awareness of healthful proteins. More than a half lack the awareness of deleterious effects of added sugar. Most used to eat fast food habitually.

Recommendations

There is a need for the community health nurses to establish community-based interventions that aim to raise students' health awareness of the meal patters, high-calory diet, eating fruits and vegetables, healthful proteins, deleterious effects of added sugar, fast food, eat breakfast, and drinking soft drinks.

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