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Health belief model of Adolescents Girls regarding dietary habits at secondary school in Thi-Qar Governorate

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***Abstract*---**Background: Nutritionally, adolescence is a critical stage of life. Obesity and diet-related disorders might develop as a result of poor eating habits developed during adolescence. Objectives: The study's objectives are to investigate the health belief model of adolescent girls on dietary habits and to determine the impact of sociodemographic factors on the HBM of dietary habits in adolescent girls. Methods: Cross-sectional A descriptive research was conducted at three secondary schools, with 200 females chosen at random from a convenience sample. The information gathered from the sample using a self-report HBM scale. Results: Of 200 girls, 106 (53 percent) are between the ages of 17 and 19, 123 (61.5%) are between the ages of 17 and 19, 64 (32 percent) of girls' moms have a secondary school education, 51 (25.5%) of girls' fathers have a secondary school education, and 125 (62.5%) of families are barely enough. On average, girls get a low rating for the health belief model when it comes to food choices (2.458). The HBM of dietary habits is significantly influenced by the students' age, BMI, and monthly income. Conclusion: In terms of food habits, the study sample has a low HBM. To increase their knowledge, attitude, belief, and practice of good eating habits, a health education program must be implemented.

***Keywords*---**Health Belief Model, Adolescents' Girls, Dietary Habits.

Introduction

Adolescence (10–19 years) is a vulnerable period of life since it is at this time that health-related behaviors that drive major chronic degenerative diseases begin or are reinforced. Food habits of adolescents are major factors of their current and future health. Adolescent food intakes in affluent countries such as the United States, the United Kingdom, and Australia do not meet nutritional requirements [1,2,3].

The transition from childhood to adolescence is often accompanied by an increase in undesirable lifestyle practices such as irregular sleep patterns and poor eating habits. Early school start times, longer school hours, late night activities, a disrupted sleep–wake pattern, and less opportunities for daytime naps all contribute to sleep deficit. Sleep deprivation can result in cognitive impairments, low mood, and poor interpersonal human connections [4,5,6].

Nutritionally, adolescence is a fragile stage of life. Obesity and diet-related disorders might develop as a result of poor eating habits developed during adolescence. Furthermore, the high prevalence of dieting behaviors can lead to nutritional deficiencies and the emergence of eating disorders. Nutrition assessment, counseling for the teenage patient and caregivers, and referral to a dietician if necessary can all be done by primary care doctors. Because of the increased pace of development and changes in body composition associated with puberty, dietary requirements during adolescence are greater [7,8,9] .

Because adolescent physical growth is related with increasing nutritional needs, it is critical to develop appropriate eating habits. Various studies of teenage and young adult diets and nutrition intake in the developed world have revealed that their meals are often heavy in fats and refined carbohydrates [10,11] . Adolescent females are more prone to disease in developing nations, and they are more exposed to dietary difficulties [12,13]. Adolescence is a stage of intense anabolism in which all dietary needs increase. During adolescence, bone mass rises by 45 percent and significant bone remodeling occurs, and soft tissues, organs, and even red blood cell mass expand in size [14].

Excessive consumption of sugary drinks, candies, and fatty salty snacks, as well as reduced consumption of fruits, vegetables, and milk/dairy, are all common during adolescence. These activities are risky since they have been related to an increase in the risk of obesity and cardiovascular disease. Adolescents have been accused of behaviors such as skipping breakfast or eating snacks instead of dinner. These behaviors may result in a poor nutritional diet, inadequate nutrient intake, and an increased risk of being overweight or obese [15] .

The eating habits developed throughout adolescence will last throughout adulthood. Healthy eating habits are critical for future growth and development, as well as the prevention of diet-related ailments. Some of the barriers to healthy eating include a lack of time, a lack of information of healthy eating recommendations, and a poor socioeconomic level, which mandates a limited availability of nutritious food [16].

There is serious concern about the rise in poor dietary behaviors among young people, such as skipping breakfast and drinking more sweetened soft drinks, and their likely role in the etiology of juvenile obesity. Arab teenagers' diets are marked by a lack of fruit, vegetables, and milk, as well as a high intake of sugar-sweetened beverages, fast foods, and sweets [17,18]. According to research, parental support, peer pressure, and the media's influence all have an impact on adolescents' eating patterns. In order to regulate an adolescent's dietary intake and weight control practices, parents must provide encouragement and support [19,20].

Family meals and dieting patterns, weight status, and cultural ideals for thinness, which are linked to body weight views, are all factors that influence eating behaviors. Adolescents are more likely to miss breakfast and participate less in family dinners, which could explain why they aren't meeting dietary standards. Adolescent health has been linked to the frequency of family meals, including optimal nutritional intake and establishing a positive attitude toward food and diet quality. On the other side, missing family dinners is linked to poor nutrition quality and harmful eating habits [21].

Policies that promote healthy eating habits and regular physical exercise may have a positive impact, according to investments made in younger age groups, and are attainable by adopting new tools supplied by information and communication technology, enhancing green areas, and incorporating schools [22,23] . The Health Belief Model is one of the most commonly used frameworks for studying health behavior (HBM). The HBM is indicated to increase the impact of nutrition education initiatives. This model's constructs are perceived susceptibility, severity, threat, advantages and barriers, self-efficacy, cues to action, and taking health action [24,25].

The Health Belief Model (HBM) depicts the link between beliefs and health. It is based on the hypothesis that preventive health behavior is made up of personal beliefs that are used to understand health behavior and possible reasons for non-compliance with recommended health actions, and that these beliefs can be used to develop program guidelines. enabling planners to comprehend and address noncompliance issues [26,27].

HBM's dimensions are as follows: The perception that a person may develop a disease or illness as a result of a particular activity is known as perceived susceptibility. The extent of the losses is believed to be the effect of contracting an illness or suffering a traumatic condition as a result of a specific action. Perceived roadblocks, as well as ideas about the expense of pursuing a new behavior. The belief in the benefits of the recommended measures to lessen the risk or severity of disease is referred to as perceived benefits. Cues to action are the catalysts that make a person feel compelled to act. Self-efficacy is the belief in one's own ability to perform a task [28,29,30].

Objectives of the study:

The study's objectives are as follows:
1. To evaluate adolescent girls' food habits in relation to their health beliefs
2. To determine the impact of sociodemographic factors on the HBM of food habits in adolescent girls.

Research questions:
1. What are the food habits of adolescent females' health belief models?
2. Do sociodemographic factors have an impact on the health belief model of eating habits?

Methods

Study design:
A descriptive (cross-sectional) study was done from February 1st to April 1st, 2022, to assess the health belief model of adolescent females regarding eating habits. The research was conducted in three secondary schools in the city of Al-Nasiriyah.

Sampling:
The study sample consists of 200 girls who were chosen using a non-probability sampling method (convenience sample).

Instrument:
The research instrument is a two-part questionnaire. The first section dealt with the students' socio-demographic data (age, the level of education of the parents, monthly income and body mass index). The health belief model scale is the second part. It contains 32 items pertaining to HBM structures that were decided using a five-point Likert scale ranging from strongly agree to strongly disagree. The HBM elements are divided into six domains: first, perceived vulnerability (2 items), second, perceived severity (2 items), third, perceived advantages (8 things), fourth, perceived barriers (14 items), fifth, self-efficacy (4 items), and sixth, signals to action (2 items).

Rating and scoring:
The instrument rating is based on a five-point Likert scale, with 5 points denoting strong agreement, 4 points denoting agreement, 3 points denoting neutrality, 2 points denoting disagreement, and 1 point denoting strong disagreement.
Model of poor health beliefs = (1-2.66)
Model of moderate health beliefs = (2.67-3.33)
Model of good health believe = (3.34-5)

Validity and Reliability:
The instrument's validity is determined by its content validity (panel of experts). Cronbach's alpha coefficient was used to determine the questionnaire's internal consistency. Cronbach's alpha coefficient is at an acceptable level (0.84).

Ethical consideration:
The researcher informs the adolescent girls about the study and its goals, and then asks for their verbal consent to participate in the study. The data is collected by the investigator using a self-administered approach.

Data analysis:
The descriptive and inferential statistical data analysis performed by (SPSS) version 20

Results

Table (I) distribution the sociodemographic characteristics of adolescents' girls

Variables		Frequency	Percent
Age	11-13	58	29
	14-16	36	18
	17-19	106	53
	Total	200	100
BMI	Under weight	21	10.5
	Normal weight	123	61.5
	Overweight	23	11.5
	Obese	33	16.5
	Total	200	100.0
Mothers' education	Can read and write	18	9.0
	Primary school	42	21.0
	Secondary school	64	32.0
	Institute	33	16.5
	College	43	21.5
	Total	200	100.0
Fathers' education	Can read and write	18	9.0
	Primary school	40	20.0
	Secondary school	44	22.0
	Institute	47	23.5
	College	51	25.5
	Total	200	100.0
Monthly income	Not enough	25	12.5
	Barely enough	125	62.5
	Enough	50	25.0
	Total	200	100.0

According to the findings, 106(53%) of girls between the ages of 17 and 19 have a normal BMI, 123(61.5%) of girls have a normal BMI, 64(32%) of girls' mothers have a secondary school education, 51(25.5%) of girls' fathers have a secondary school education, and 125(62.5%) of families are barely enough.

Table (II) adolescents' girls health belief model regarding anemia preventive behavior

No.	Domains	Mean	SD	Minimum	Maximum	Ass.
1	Perceived susceptibility	2.383	.6077	1.5	3.5	Poor
2	Perceived severity	2.180	.2925	2.0	3	Poor
3	Perceived benefits	2.205	.2760	1.8	2.6	Poor
4	Perceived barriers	2.409	.2043	2.1	2.6	Poor
5	Self-efficacy	2.938	.3791	2.3	3.8	Moderate
6	Cues to action	2.638	.5374	1.5	4	Poor
7	The overall HBM	2.458	.23685	1.97	3	Poor

SD= standard deviation, Ass. = assessment; levels of assessment are Poor health belief model = (1-2.66), Moderate health belief model = (2.67-3.33), & Good health belief model = (3.34-5)

Girls have a low level of evaluation for the health belief model when it comes to food habits, according to the findings (2.458). For the domains, they have a low amount of HBM (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, & cues to action). In the self-efficacy domain, they show a moderate level of HBM.

Table (III) multiple regression between adolescents' girls Health Belief Model about dietary habits and demographic characteristics

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.501	.103		24.385	.000
Age	-.014	.006	-.126	-2.408	.017
Body mass index	-.122	.015	-.452	-8.408	.000
Mother education	-.008	.027	-.041	-.288	.774
Father education	.037	.026	.206	1.441	.151
Monthly income	.175	.020	.445	8.868	.000

Dependent variable is Health Belief Model

The results show that students' age, BMI, and monthly income all had a significant impact on HBM of dietary habits, with p values of (0.017, 0.000, and 0.000, respectively.

Conclusion

In most categories, the study found that adolescent girls have a low degree of health belief model related food behaviors (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, & cues to action). The HBM of dietary habits is significantly influenced by the students' age, BMI, and monthly income. Adolescent girls need to increase their nutrition knowledge, attitude, belief, and practice.

Recommendation

Early diagnosis of nutritional problems and prevention of consequences through regular visits by health care personnel to schools. Girls should be taught about proper nutrition and dietary habits, as well as the importance of eating foods that contain specific vitamins and minerals.

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