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EVALUATION OF NUTRITIONAL PATTERNS OF PREGNANT ADOLESCENTS

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Abstract
Background: nutrition refers to the process by which the body uses and absorbs the nutrients found in a food. The scientific evaluation of nutritional composition, the physiological function of nutrients, and nutritional requirements of people with different ages, activities, and lifestyles are all part of its research. People differ in their stature, weigh, and level of exercise, so what is effective for one may not work for another **.**Since their changing behaviors and negative body image, adolescents who are pregnant have specific requirements for nutrition.
Objectives: Evaluate The Nutrition Patterns of Pregnant Adolescents. Methods: A descriptive design was carried out at Primary Health Care Centers in Al-Diwaniyah City for the period from 31 of December 2023 to 1 of May 2024. A non-probability (purposive) sample of 100 pregnant adolescents who Visit Primary Health Care Centers to Obtain Health Care was selected by Interview of pregnant and show questioner and take social and personal demographic information and relying on a questionnaire, nutritional health was evaluated. Special interviews are conducted with directors of primary health care centers to explain the importance, objectives of the study and the data. addition, Data is collected through the use of a questionnaire, and interviewing pregnant teenagers after they agree to be interviewed individually and confidentially for scientific research purposes only. Result: Based to the study, there are pregnant women as young as 15 years old, there is an moderate relationship between dietary patterns and adolescent pregnancy, and the majority of pregnant adolescents are underweight due to malnutrition. Conclusion: The study's conclusion showed that pregnant adolescents who are visit in Diwaniyah City primary health care centers have moderate nutritional patterns.
Key Words: Nutritional Patterns, Pregnant, Adolescents

قييم الأنماط التغذوية للمراهقات الحوامل

الخلاصة
المقدمة: تشير التغذية إلى العملية التي يستخدمها الجسم ويمتصها العناصر الغذائية الموجودة في الطعام. إن التقييم العلمي للتركيبة الغذائية، والوظيفة الفسيولوجية للعوامل المحفزة، والمتطلبات الغذائية للأشخاص من مختلف الأعمار والأنشطة وأنماط الحياة كلها جزء من أبحاثها. يختلف الناس في قامتهم ووزنهم ومستوى تمرينهم لذا فإن ما هو لآخر . فعال بالنسبة لشخص قد لا يصلح نظرًا لسلوكياتهم المتغيرة وصورتهم الجسدية السلبية، فإن المراهقات الحوامل لديهن متطلبات محددة للتغذية .
.**الاهداف**: هدفت الدراسة الحالية إلى تقييم الأنماط الغذائية للمراهقات الحوامل. **الطرق**: تم تنفيذ التصميم الوصفي في مراكز الرعاية الصحية الأولية في مدينة الديوانية للفترة .من 30 كانون الأول 2023 إلى 31 أيار 2024
تم اختيار عينة غير احتمالية (هدفية) مكونة من 100 مراهقة حامل ممن يزورن مراكز الرعاية الصحية الأولية للحصول على الرعاية الصحية عن طريق مقابلة الحوامل وإظهار الاستبيان وأخذ المعلومات الديموغرافية الاجتماعية والشخصية وبالاعتماد على الاستبيان تم تقييم الصحة
تم إجراء مقابلات خاصة مع مديري مراكز الرعاية الصحية الأولية لشرح .الغذائية
أهمية وأهداف الدراسة والبيانات
إضافة الى ذلك. تم جمع البيانات من خلال استخدام الاستبيان، وإجراء مقابلات مع المراهقات الحوامل بعد موافقتهن على إجراء مقابلات فردية وسرية لأغراض البحث العلمي فقط. **النتائج :** وبناء على الدراسة، هناك نساء حوامل لا تتجاوز أعمارهن 15 عاما، وهناك علاقة معتدلة بين الأنماط الغذائية وحمل المراهقات، كما أن غالبية المراهقات الحوامل يعانين من نقص الوزن بسبب سوء التغذية . **الاستنتاج :** وأظهرت استنتاجات الدراسة أن المراهقات الحوامل في مراكز الرعاية الصحية الأولية في مدينة الديوانية يتمتعن بعادات غذائية معتدلة .

INTRODUCTION

For the fetus to achieve its full potential in terms growth and development—both physically and mentally—adequate nutrition is vital during pregnancy. It is commonly accepted that fetal nutrition is essential to the health of the newborn, and that it affects health all through childhood and adulthood, possibly leaving an impact on later generations [1].

A comprehensive evaluation of diet is essential for both weight and health issues, particularly in cases of obesity. It helps therapists develop treatment plans that include less energy consumption and more activity [2].

adequate pre-gestational nutritional, a rise in gestational weight, and adequate food consumption are essential for optimum outco [3].

adolescents' girls among the ages of 15 and 19 are more likely to have adverse pregnancy results, with problems with birth ranking as the second-leading cause of death in this age group. Pregnancy and adolescence are essential time for growth and development, need additional calories on those periods. Nutritional depletion is more common in adolescent moms due to competition between the mother and the fetus [4].

Nutrition play an essential role in the course of pregnancy and the successful outcomes resulting in a viable baby with a birth weight that is acceptable and an infant free from genetic disorders [5].

Adolescents with poor nutritional status might improve or adversely affect their mother's health. While a diet low in calcium lowers the risk of osteoporosis and reduces bone density, a diet high in fat increases the risk of heart disease. Furthermore, insufficient calories might affect children's growth and development [6].

In the US, a significant number of pregnant women disregard the suggested weight loss and diet. A balanced diet should prioritize nutrient-dense whole foods over processed foods, such as fruits, vegetables, legumes, whole grains, fish, and healthy fats [7].

Adolescence is marked by an array of physical, psychological, and emotional changes that vastly increase the demand for food. Yet, Ethiopian data tend to focus mainly on pregnant women and children under five, at times overlooked differences between adolescent females in urban and rural areas [8].

Nutrition have an effect on growth and development at all ages of life, but it especially essential through infancy, childhood, and adolescence. In developing nations like Ethiopia, where 84% of young people are adolescents, girls make up the majority of adolescents [9].

Adolescent pregnancy is an important issue for public health that effects 1.8 billion people worldwide, or 25% of the population. These young women frequently have inadequate food along with significant physical, cognitive, and psychological changes as a result of a lack of knowing, resources [10].

Human survival is dependent on nutrition, which is essential for ages, gender, and pregnancy, among other factors. Pregnant women have particular difficulties and increased health risks, and malnutrition can have adverse effects immediately [11].

The overall wellbeing of human living is greatly affected by nutrition; this includes factors like height and weight, development, growth, and immunity to infection [12].

Risk factors during pregnancy are pregnancy-related hypertensive diseases, anemia, gestational diabetes mellitus, premature membrane rupture, vaginal bleeding, and HELLP syndrome Around the world, preeclampsia affects 5% to 10% of pregnancies (Health, 2017). The three primary causes of maternal death are hemorrhage cardiac disease, and preeclampsia/eclampsia [13].

Considering its development and avoidance, addressing its bases, and people-focused strategy, nutrition is a fundamental component of primary health care and the basis for everyone is health and welfare—no one remains behind [14].

A individual's nutrition is important to their their survival, well-being, and growth throughout their life. Adequate food and healthy vitamins are necessary for resilience, physical and mental development, accomplishment, and efficiency. Health and wellbeing from the first stages of fetal development via childhood, childhood, adolescence, adulthood, and old age. It is the foundation of both society and personal growth. [15].

Nutrition labeling has been an essential instrument in the effort to encourage healthy dietary habits. The goal of nutrition labeling is to give consumers information about the nutrient content of individual food products at time of purchase so that they may make educated dietary choices [16].

A significant factor in the development of digestive issues is nutritional habits. In addition, there is scientific data associating GI diseases to spicy and hot foods. Antioxidants may be present in fruits and vegetables, [17].

gaining excessive weight while pregnant can lead to fetal and maternal diseases such gestational diabetes and is one of the primary concerns among pregnant women worldwide. [18].

METHODS

Study Design

This descriptive quantitative (Non – experimental) Study design. was performed to evaluate the nutritional Patterns of the pregnant adolescents.

Setting and Period

The present study is carried out in urban primary health care centers for pregnant adolescents who visit health centers to receive health services.in period between 30 December 2023 until 31 March 2024

Study Participant

The study population was pregnant adolescent girls attending primary health care centers in the city of Diwaniyah, Iraq, who were present during the time of data collection.

Inclusion and Exclusion Criteria

All pregnant adolescents from primary health care centers who accepted to participate in the study. Pregnant adolescents who refused to participate in the study.

Sampling and sample size

A non-probability (Purposive) was selected to obtain accurate and representative data for the study participants. The sample size was (100) pregnant adolescents is selected out of (17) primary health care centers of (5) districts in AL-Diwaniyah City for the present study.

Study Instrument and Data Collection

Private interviews are conducted with the directors of the primary health care centers to explain the importance, objectives of the study and the data collection process. Data are collected through the use of a questionnaire, and interviewing pregnant Adolescents after they agreed to conduct the interview on an individual and confidential basis for scientific research purposes only. Each interview takes about (20) minutes. Data collection began from December 30, 2023 to March 31, 2024 .

Ethical Considerations

The researcher acquired consent from all participants and prevented from collecting their personal information. Furthermore, the instrument to be used in the study has been approved by the University of Baghdad's College of Nursing's Research Ethics Committee. the researcher discusses the research and its objectives to all participants. Thus, a comprehensive understanding of their mission was acquired. The researcher informed all participants that the outcomes of the questionnaire would be only employed for research objectives. subsequently was also communicated that all participants are autonomous individuals who have the ability to refuse participation .

Statistical Analysis

Statistical procedures including description and inference were conducted. The descriptive analysis included frequency, percentage, mean,, standard deviation ,minimum and maximum . Chi-Sequared test was conducted to examine the association between Nutritional patterns and pregnant Adolescents . A result is considered statistically significant when the p-value is 0.05. The data were analyzed using SPSS Statistics version 26. The reliability of the study instrument was evaluated using the Cronbach's alpha method in SPSS version 26 evaluate was carried out on five pregnant adolescents in primary health care centers in Al-Diwaniyah city, Iraq, analysis showed that Cronbach's Alpha was = .715 for Nutritional patterns , indicating a statistically reasonable match constrained by the reliability factor .

RESULTS

Based to the study's findings, 40% of the participants was among the age range of 17 and 18. About the level of education, over a quarter of the samples (28%) graduated from middle school, more than three quadrants (84%) had extended family, and 44% of husbands did not have a job. In regard to monthly income, (49%) had less than $300,000. Lastly, owned housing covered 75% of all home ownership. Table 2 indicates that the minimum mean is 1.09 with the item (I drink tea, coffee, and soft drinks) and the maximum mean is 2.99 with the item (Refrain from eating particular a meal).

Table 1: Distribution of demographical characteristics for pregnant adolescent in Primary Health Care centers in the Diwaniyah City.

			f = %
Age/year	13-14		2
	15-16		29
	17-18		**40**
	19-20		29
	Total		100
Educational level	She does not read or write		11
	Read and write		25
	In elementary school		22
	Middle school		**28**
	Institute \ college		14
	Total		100
Husband's profession	Work	Government sector	10
		Private sector	21
	Unworked	Student	25
		Unemployed	**44**
	Total		100
Family type	Nuclear		16
	Extended		**84**
	Total		100
Monthly income	**Less than 300,000**		**49**
	300,000-600,000		28
	601,000-900,000		16
	901,000-1,200,000		7
	Total		100
Housing ownership	**owned housing**		**75**

	Rented housing	25
	Total	100

Table 1 indicates that almost half of the participants were between the ages of 17 and 18. About educational status, more than one quarter of the samples (28%) graduated from middle school, more than three quadrants (84%) had extended family, and 44% of husbands did not have a job. In terms of monthly incomes, (49%) had less than $300,000. Finally, owned housing accounted for 75% of all home ownership.

Table 2: Distribution of responses of pregnant adolescent regarding Nutritional Patterns.

		f = %	Mean	SD	Assessment
Eat three main regular meals	Sometimes	62	2.28	.488	Moderate
	Always	38			
	Total	100			
Use iodized salt in food preparation	Sometimes	30	2.70	.461	Good
	Always	70			
	Total	100			
I drink water and other liquids at a rate of (8) glasses per day	Sometimes	25	2.75	.435	Good
	Always	75			
	Total	100			
I drink plenty of water while eating	Sometimes	6	2.94	.239	Good
	Always	94			
	Total	100			
I eat food in restaurants	Sometimes	4	2.96	.197	Good
	Always	96			
	Total	100			
Refrain from eating certain foods	Sometimes	1	2.99	.100	Good
	Always	99			
	Total	100			
I fast from food	Sometimes	3	2.97	.171	Good
	Always	97			
	Total	100			
I drink tea, coffee and soft drinks	Always	91	1.09	.288	Poor
	Sometimes	9			
	Total	100			

Table 2 shows that the minimum mean is 1.09 with the item (I drink tea, coffee, and soft drinks) and the maximum mean is 2.99 with the item (Refrain from eating particular a meal).

Table 3: Overall Nutritional Patterns of pregnant adolescent in Primary Health Care centers in the Diwaniyah City.

Overall Nutritional Patterns	Poor	13
	Moderate	81
	Good	6
	Total	100

Table 3 indicates that middle nutritional patterns have been identified in 81% of pregnant adolescents in Diwaniyah city's primary health care centers.

Table 4: Distribution of responses of pregnant adolescent Primary Health Care centers in the Diwaniyah City table regarding frequency of food intake .

		f=%
Bread/wheat flour	Non	1
	(1-5)/day	84
	(1-4)/week	15
	Total	100
Rice	Non	32
	(1-5)/day	63
	(1-4)/week	5
	Total	100
Vermicelli/macaroni	Non	8
	(1-5)/day	30
	(1-4)/week	62
	Total	100
Other pill (Fine bulgur)	Non	7
	(1-5)/day	1
	(1-4)/week	12
	(1-2) month	80
	Total	100
Potato	(1-5)/day	11
	(1-4)/week	89
	Total	100
Legumes (Beans, kidney beans, and cowpeas)	Non	2
	(1-5)/day	13
	(1-4)/week	73
	(1-2) month	12
	Total	100
Red meat (Sheep, goat , cow)	Non	8
	(1-5)/day	23
	(1-4)/week	57
	(1-2) month	12
	Total	100
White meat (Poultry fish)	Non	0
	(1-5)/day	27
	(1-4)/week	73
	Total	100
Egg	Non	12
	(1-5)/day	84
	(1-4)/week	4
	Total	100
		f=%
Vegetable oil, ghee, butter	(1-5)/day	87
	(1-4)/week	13
	Total	100
Milk	No	3
	(1-5)/day	86
	(1-4)/week	12
	Total	100

Cheese milk	Non	3
	(1-5)/day	36
	(1-4)/week	61
	Total	100
Tomato vegetables	(1-5)/day	84
	(1-4)/week	16
	Total	100
Green leafy vegetables (Celery lettuce tender)	(1-5)/day	28
	(1-4)/week	71
	(1-2) month	1
	Total	100
Fruits (Banana apple orange)	(1-5)/day	58
	(1-4)/week	42
	Total	100
Dates	(1-5)/day	21
	(1-4)/week	63
	(1-2) month	16
	Total	100
Ready foods	Non	5
	(1-5)/day	34
	(1-4)/week	51
	(1-2) month	10
	Total	100
Pastries (Kleija, cake, biscuit)	(1-5)/day	52
	(1-4)/week	47
	(1-2) month	1
	Total	100
Candies (Baklava dumplings nasatl)	Non	4
	(1-5)/day	24
	(1-4)/week	61
	(1-2) month	11
	Total	100
Soft drinks (Pepsi Seven)	Non	23
	(1-5)/day	41
	(1-4)/week	13
	(1-2) month	23
	Total	100
Mineral water	(1-5)/day	91
	(1-4)/week	9
	Total	100
Nuts (Pistachio seeds)	(1-5)/day	32
	(1-4)/week	57
	(1-2) month	11
	Total	100
Herbs	No	100

Table 4: shows 84% of participants take wheat flour or grain daily, and 63% eat rice every day, 62% eat macaroni/vermicelli once a week, and 80% monthly use of another medication (Fine Bulgur), 89% weekly intake of potatoes, 73%; weekly intake of legumes (beans, kidney beans, and cowpeas), 57% eat weekly red meat (cattle, goats, and sheep), 73%; weekly white meat (fish, poultry), 84% eat eggs every day, (87%) ghee, butter, and vegetable oil every day, and (86%), eat milk every day, 61% eat cheese milk on a weekly basis, 84% eat tomatoes every day, and 71% eat leafy greens (tender celery lettuce) once a week, (58%) eat fruits (bananas, apples, oranges) every day and dates (63%) every week. Weekly intake of ready foods is (51%), pastries (Kleija, cake, biscuit), candies (Baklava dumplings nasatl) is (52%), and soft drinks (Pepsi) is (41%), (91%) take Mineral water daily, and (57%) take Nuts (Pistachio seeds) weekly.

Discussion

Table 1 shows that forty percent (40%) of the participants were among their ages of 17 and 18. This finding indicates that pregnant adolescents are the most at risk population in this age group due to their age and their developmental transitional periods they are going to go though.Of the 125 participants in the study, the majority of the pregnant teenage females were among the ages of 16 and 17, according to another study conducted in the Philippines [19].The results show that the educational level of the samples was middle school for more than one quadrant (28%). This indicates that the low economic and cultural status is a result of the low learning level, making it difficult to recognize the importance of eating nutritious meals and how it affects the fetus's and the pregnant woman's health as well as the necessary nutrients consumed during pregnancy.Our research's results disagree with a 2022 study that indicated that, between study participants, the most percentage (30%) had graduated from primary school [20]. Based on the results, 44% of the husband was unemployed. In regard to monthly income, (49%) had less than $300,000. As result, researchers evaluate when the pregnant woman get enough food due to her husband's jobs. The sum of money that a partner makes every month will determine the nutrients a pregnant woman requires to eat. When a pregnant woman's monthly income reduces, her health and nutritional status also decrease, and vice versa.Findings of our review conflict with those of a 2019 study, which indicated that the majority of study participants (78.6%) fall into an almost sufficient socioeconomic position [21].Results show that more than three quadrant (84%) were Extended family . , (75%) of Housing ownership were owner housing. Sine Bigger families have larger nutritional and their houses needs, so requirements aren't met to the same amount. Therefore, the pregnant woman's insufficient nutrition effects both her and her fetus. This same applies if the residence is rented, as this affects the pregnant woman's nutrition.The result was similar to research conducted by (Hadeel 2023) 72.6 percent of students identified as to an extended family [22].Based on Table 2, the minimum mean for the items (I eat coffee, tea, and soft drinks) is 1.09. Therefore, tea containing caffeine increases the likelihood that it can cross the placenta and damage the developing baby, raising the risk of miscarriage, early birth, and low birth weight. Consume in a moderate amount. If drinking coffee during pregnancy has an effect on the growing fetus, it could lead to a miscarriage. Soft drinks have significant adverse effects, one of which reduces the absorption of iron, leading to anemia, one of the most common diseases affecting adolescents. It could cause weakness in general and appetite loss. It also includes a lot of sugar, which causes pregnant women to gain weight in ways that are not plannedTable 3 shows that middle nutritional patterns are found in 81% of pregnant adolescents in Diwaniyah city's

primary health care centers., is a variety of reasons, include having a low monthly income (which only covers half of their nutritional requirements) and not understanding the importance of specific nutrients during pregnancy, adolescents who are pregnant usually have average nutritional patterns.

Table 4 shows that the majority of the study participants consumed the greatest proportion of (bread, eggs, vegetable, milk, tomato, and mineral water) and the lowest percentage of (rice), with fruit coming in second place and down to (soft drinks, potato, green leafy vegetables, white meat, legumes, dates, cheese milk, red meat, nuts, pastries, ready foods, and pill) . Based on findings, it can be seen to determine that, while the reality that pregnant adolescents consume a more acceptable percentage of food, this percentage still falls compared to their daily average of eight cups or more of water. In addition, a dismal 41% of individuals use soft drinks, which is high for pregnant women given their significant dangers to health.Because consuming prepared food full her up, the pregnant woman might not be able to eat the three main meals.

Strengths and Limitations

This study's strength is that it recognized a problem that needs solution.an apparent absence of knowledge and comprehension, causing women to be unaware of the essential nutritional components that pregnant women have to understand. The small size of the sample of the study is one of its most important problems.

CONCLUSION

The findings of the study showed that the nutritional patterns of adolescent pregnant patients at the primary health care clinics of Diwaniyah City are moderate .

RECOMINDATION

The health ministries should be disseminate information and educate pregnant women in nutritional considerations. Support the idea of educating new mothers about a healthful diet and providing information in a comprehensible simple approach.

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