The association between quality of habitual diet and mental health status among Iraqi women attending primary health care centers

La asociación entre la calidad de la dieta habitual y el estado de salud mental entre las mujeres iraquíes que asisten a los centros de atención primaria de salud

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Abstract

Background: Recent evidence suggests a role for diet quality in the common mental disorders depression and anxiety.

Objective. We aimed to investigate the association between diet quality, dietary patterns, and the common mental disorders in Iraqi females.

Methods: a cross-sectional study, in 400 females whom attended to the five main primary health care centers (PHCCs) in Baghdad. It was applied a special certified survey for assessment of the normal diet, and the anxiety plus depression scale to assess the mental status of patients. Results were analysed by ANOVA and Multivariate analysis to adjust for the effect of other variables**,** P<0.05 was considered significant.

Results: a healthy diet that was high in vegetable content decrease depressive symptoms (P=0.009) and was not associated with anxiety (P=0.761), while high fat intake increased anxiety (P=0.038) and there was no relation with depression (P=0.674). For diary products intake the results were, P=0.381 for depression and P=0.041 for anxiety).

Conclusions: Females with healthy wealthy nutritional status were less likely to be depressed, whereas a higher intake of fatty and unhealthy foods was associated with increased anxiety.

Keywords: Habitual Diet, Anxiety, Depression, Primary care.

Antecedentes: la evidencia reciente sugiere un papel de la calidad de la dieta en los trastornos mentales comunes, depresión y ansiedad.

Resumen

Objetivo. Nuestro objetivo fue investigar la asociación entre la calidad de la dieta, los patrones dietéticos y los trastornos mentales comunes en las mujeres iraquíes.

Métodos: estudio transversal, en 400 mujeres que acudieron a los cinco principales centros de atención primaria de salud (APS) de Bagdad. Se aplicó una encuesta especial certificada para la evaluación de la dieta normal y la escala de ansiedad más depresión para evaluar el estado mental de los pacientes. Los resultados se analizaron mediante ANOVA y análisis multivariante para ajustar el efecto de otras variables, se consideró significativo P<0,05.

Resultados: una dieta saludable con alto contenido de vegetales disminuyó los síntomas depresivos (P=0,009) y no se asoció con la ansiedad (P=0,761), mientras que la alta ingesta de grasa aumentó la ansiedad (P=0,038) y no tuvo relación con la depresión (P=0,674). Para los productos lácteos, los resultados fueron, P=0,381 para la depresión y P=0,041 para la ansiedad).

Conclusiones: Las mujeres con un estado nutricional saludable y rico tenían menos probabilidades de estar deprimidas, mientras que una mayor ingesta de alimentos grasos y poco saludables se asoció con una mayor ansiedad.

Palabras clave: Dieta habitual, ansiedad, depresión, atención primaria.

Introduction

The development of psychological fitness is a multi factorial-technique regarding hereditary, organic, community, and ecological effects. In the recent years, care has warped to the imminent part of adaptable routine performances like diet, in the progress of recurrent mental health illnesses[1-3]. Multi compound food and nutrients approaches which inspect the united properties of numerous nutritional mechanisms could have vital open health insinuations, subsequently, the letters on characteristic whole nutrition consumption, rather than accurate nutrients may be additional education to community health[4]. In addition, the common paper showed an association between nutritional status and mental lifestyle especially that associated with signs and symptoms of depression and anxiety and how can decrease it[5].

Depression: is a frequent mental disorder that presents with depressed mood, loss of concern or pleasure, decreased energy, thoughts of guilt or low self-value, distressed sleep or appetite, deprived concentration and is usually accompanied anxiety symptoms, either chronic or repeated, suicide is one of the results of depression[8]. Depressive illnesses commonly began at a young age-old; they reduction people are active and commonly are repeated so it is represented as one of the leading causes of disability in the world[9].

Nutritional designs effects on mental health position: The nutritional consumption classic of the usual people in many Asian and American nations demonstrations that they are lacking in numerous nutrients, chiefly vital vitamins, minerals, and omega-3 fatty acids, an illustrious characteristic of the nourishments of patients that are suffering from mental illnesses is the harshness of inadequacy in these nutrients[15].

The Aims of the study are to:

1) Find out the relationship between habitual diet and Mental health status of Iraqi women (anxiety, depression) attending primary health care centers. 2) Demonstrate if there is an association between this relation and other demographic data of the participants.

Subjects and Methods

A cross-sectional study was conducted from 2nd Jan. – July 2018, in the following primary health care centers (PHCs): Bab-Almuadam, Al-Saliekh, Al-Adahmia, Al-Dhubat, Al – Mustansyria. 400 women were enrolled in this study, with age ranged (18-60 years). Inclusion criteria: Participants were chosen by a systematic random sampling (every other female attending each primary health care centers).

Exclusion criteria were: Women who has a chronic disease. 2-Pregnant women. 3-Women on chronic medications including anti-depressant and anxiolytic drugs. 4-Women with severe food allergies, intolerances or aversions. 5-Women with current participation in an intervention targeting diet or exercise

Clinical data and study questionnaire

Data were collected by two questionnaire forms[17-19], Dietary intake questionnaire: nutritional intake assessment done by (FFQ) food frequency questionnaire, for normal diet intake for 6 months this questionnaire was certified by, an Iraqi Institution for nutritional studies. The food items were gathered to reveal the typical Iraqi meals. Food frequency questionnaire was composed of five frequencies of consumption alternative for each food variable such as Nothing, Once weekly, 2-3 times per week, Once daily, 2-3 times per day. The food frequency questionnaire included questions about the following food items:

Dairy products, Fluid, and drinks: water, tea, coffee, soft drinks, Meat, Vegetables, Bread, Ghee/butter, Fast and processed food, Fruits

Mental health status questionnaire

Depression and anxiety were measured by using the hospital Anxiety and Depression Scale (HADS), were the subjects were informed to choose the answer that is closest to how they have been feeling in the past week.

Depression and anxiety scoring: Questions relating to anxiety are indicated by an 'A' while those relating to depression are shown by a 'D'. Every single answer was given a specific score and the total score for anxiety and depression were considered. The score interpretation was as followed: 0-7 =normal, 8-10=borderlines , $\geq$11 =abnormal

Demographic data: Age, Marital status, Educational level, Smoking, Socioeconomic status: Divided according to average income of Iraqi families Low <500.000 Iraqi dinar(ID), Medium 500.000-1 million (ID) , >1million (ID).

Data management and statistical analysis: Data were encoded and submitted into the statistical software package of social science (SPSS version 22). Descriptive data were presented in frequencies (percentage, graphs) for categorical variables and mean±standard error for continuous variables was done to describe the study population. ANOVA test analysis was used for continuous data (mean±standard error) to test statistical significance. Multivariate analysis was done to adjust for the confounding effect of other variables and describe the genuine relationship between each variable and depression and anxiety. For that purpose, a step-wise Multinomial Logistic Regression analysis was undertaken, and the odds ratio was calculated to describe the predictive value of each variable and its relationship with depression and anxiety. A P-value of less than 0.05 was considered significant in this study.

Results

A total 400 women were enrolled in the study, whith a mean age of 29.16 years. Of the total participant 55.5% were married and 42.5% were single. 47% of the participants had university educational level, and about two-thirds of the sample was of the middle class (65%). Demographic, The percentag-

es of anxiety status in the study sample were 48% abnormal, 27.50% borderline and 24.50% had no anxiety (Figure 1). Regarding depression, the highest percentage was normal (51%) while 20% had depressive symptoms and the remaining women had borderline status (29%).

Figure 2 show the relation between normal and usual diet and mental health (anxiety and depression), where there was a significant association between marital status, educational level, and anxiety and depression, while the significant association was found only between socioeconomic status and anxiety (Table1).

20.5% and 48% are the prevalence of anxiety and depression, females with depressive symptoms and not healthy are older than other females in our study. Opposing, anxiety status was associated with a younger age group. The study showed a significant association between dairy products, fat, and anxiety, while a positive association was found between vegetable intake and depression (Table 2, 3).

Figure 1. Distribution of the studied sample by anxiety scores

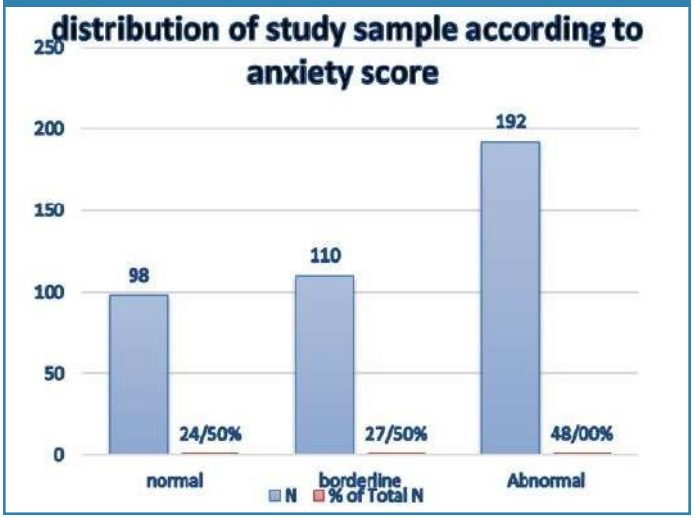

Figure 2. Distribution of the sample according to depression scores

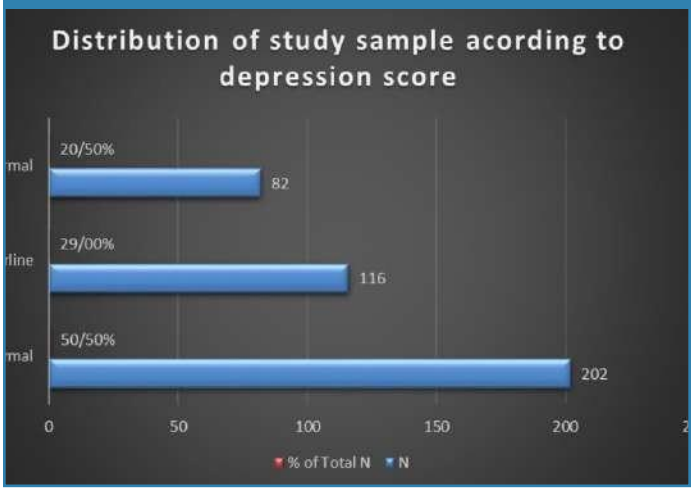

Table 1. The association between demographic data and anxiety and depression.

Characteristics		Entire cohort	Depression				Anxiety			
			Normal	Borderline	abnormal	p	Normal	Borderline	abnormal	p
Number		400	202	116	82		98	110	192	
Age		29.16 ±0.52	28.92 ±0.76	26.62 ± 1	29.07±0.95	0.021	29.73±1.04	30.81±1.21	27.90±0.62	0.001
Marital status	Married	222 (55.5%)	96 (24%)	68 (17%)	58 (14.5%)	0.006	46 11.5%)	56 (14%)	120 (30%)	0.01
	Single	170 (42.5%)	100 (25%)	46 11.5%)	24 (6%)		48 (12%)	50 (12.5%)	72 (18%)	
Socioeconomic	Low	20 (5%)	10 2.5%)	4 (1%)	6 (1.5%)	0.091	4 (1%)	6 (1.5%)	10 (2.5%)	0.01
	Average	260 (65%)	128 (32%)	72 (18%)	60 (15%)		76 (19%)	60 (15%)	124 (31%)	
	High	118 (29.5%)	64 (16%)	38 (9.5%)	16 (4%)		18 (4.5%)	42 (10.5%)	58 (14.5%)	
Education	Primary	118 (29.5%)	54 (13.5%)	32 (8%)	32 (8%)	0.031	18 (4.5%)	34 (8.5%)	66 (16.5%)	0.001
	High school	90 (22.5%)	42 (10.5%)	26 (6.5%)	22 (5.5%)		18 (4.5%)	20 (5%)	52 (13%)	
	University	188 (47%)	106 (26.5%)	56 (14%)	26 (6.5%)		62 (15.5%)	56 (14%)	70 (17.5%)	
Smoking	Yes	14 (3.5%)	2 (0.5%)	8 (2%)	4 (1%)	0.085	6 (1.5%)	2 (0.5%)	6 (1.5%)	0.141
	No	374 (93.5%)	196 (49%)	104 (26%)	74 (18.5%)		90 22.5%)	104 (26%)	180 (45%)	

Table 2. The association of dietary intake of different types of food and depression and anxiety status

Entire cohort	Depression			Anxiety				P-value	
	Normal	Boarder line	Abnormal	p	Normal	Boarder line	Abnormal		
Dairy products	3.01 ±0.06	2.94 ±0.1	3.01±0.17	3.19±0.15	0.361	3.35±0.14	2.92±0.13	2.89±0.09	0.020
Fluid intake	2.43 ±0045	2.38±0.06	2.36±0.07	2.63±0.11	0.05	2.26±0.08	2.50±0.09	2.45±0.06	0.115
Meat	3.32 ±0.07	3.24±0.1	3.47±0.11	3.32±0.16	0.351	3.10±0.13	3.49±0.12	3.33±0.09	0.114
Vegetable	2.47 ±0.05	2.73±0.13	2.59±0.09	2.29±0.05	0.001	2.26±0.07	2.54 ±0.1	2.52±0.07	0.062
Bread	2.47±0.046	2.41±0.06	2.47±0.08	2.60±0.12	0.276	2.42±0.09	2.45±0.08	2.50±0.08	0.807
Sugar	3.08 ±0.06	2.96±0.09	3.10±0.11	3.31±0.15	0.103	3.25±0.12	3.12±0.12	2.95±0.09	0.178
Fat	2.83±0.065	2.78±0.08	2.86±0.12	2.90±0.16	0.746	2.79±0.09	2.58±0.12	3.18±0.13	0.003
Fast food	3.34±0.068	3.45±0.09	3.17±0.13	3.29±0.13	0.172	3.20±0.12	3.58±0.13	3.27±0.09	0.071
Fruit	2.68±0.058	2.66±0.08	2.62±0.10	2.80±0.06	0.533	2.83±0.12	2.69±0.11	2.59±0.08	0.249

Table 3. Multivariate analysis showing the relationship between different variables and anxiety and depression

Variables		Depression		Anxiety	
		Odds Ratio (95% CI)	P	Odds ratio (95% CI)	P
Age		0.79 (0.55-1.67)	0.781	0.98 (0.67-1.46)	0.530
Marital status	Married	2.25 (1.78-3.45)	0.021	1.78 (1.34-2.01)	0.009
	Single*	1		1	
Education	Primary*	1		1	
	High school	0.92 (0.79-1.13)	0.667	1.11 (0.76-1.56)	0.302
	University	0.63 (0.43-0.89)	0.037	0.67 (0.49-0.83)	0.041
Socio-economic	Low	1		1	
	Average	1.40 (1.09-1.69)	0.031	1.09 (0.79-1.43)	0.481
	High	0.92 (0.78-1.65)	0.431	0.99 (0.79-1.78)	0.591
Dairy products		1.21 (0.89-1.99)	0.381	0.74 (0.55-0.92)	0.041
Fluid intake **Meat**		1.1 (0.58-1.79) 1.23(0.77-1.86)	0.691 0.732	1.21 (0.78-1.78) 1.49(1.21-2.09)	0.361 0.456
Vegetable intake **Bread** **Sugar**		1.71 (1.23-2.13) 1.04(0.49-163) 1.31(0.68-1.71)	0.009 0.876 0.122	1.31 (0.54-2.21) 1.11(0.88-1.78) 1.33(1.09-1.89)	0.761 0.893 0.239
Fat **Fast food** **fruit**		1.15 (0.88-1.41) 1.84 (1.75-2.14) 1.09 (0.63-1.81)	0.674 0.123 0.548	0.81 (0.44-0.91) 0.79(0.38-0.89) 1.04(0.76-1.74)	0.038 0.128 0.346

Discussion

As the incidence of psychological illnesses lasts to develop, resistant to adaptable routine performances and interferences which affect mental health is important, this study was the first to examine nutritionally satisfied, nutritional class and their association with depressive symptoms, anxiety, and welfare in an Iraqi woman.

The association between demographic data, anxiety, and depression: The study showed that married women who represent about half of the sample were more prone to have depressive and anxiety symptoms than single or others. This may be related to the great burden laid on married females and more tasks and demands of their families in our society. It was also noticed that females who completed primary school level of education and constitutes about one third were experiencing more depressive and anxiety symptoms in comparison with others, this may be because they cannot entertain themselves or have limited income which affects the nature of their lives. Miguel-Angel Mun ozetal study showed that women with a higher educational level presented better mental health, socioeconomic results on mental health may be as a result of loss safety of jobs, physical plus psychosocial working for men and physical comfort with labor inside the home for women[20]. Better health differences defined before in women in Spain could maintenance the variances in mental health consequences in this group in the current study[21]. In this study, women who consumed more vegetables in their diet were associated with the reduction of the possibility of experiencing depressive symptoms, in a similar study done by Jacka et.al, that was constituting vegetables, fruit, and whole-grain foods was related with decrease choice of clinically identified depressive and anxiety illnesses, while a nutritional classical covering administered and ‘‘not healthy’’ diets were connected with an upgraded choice of mental symptoms, besides to focal depressive disorder and dysthymia[22]. Moreover, this study showed that women who ate dairy products more frequently were further protected from having anxiety symptoms. In comparison, dietary models and excellence have also been related to the danger of nervousness and anxiety suggesting that the code devices of diet-mental health relations are not limited to depressing indications[23]. An interesting finding in this study was the positive relationship between fat-containing food and anxiety disorder. Intervention studies decreasing dietary fat have shown improvement in mood, hostility, and psychological welfare and a decrease in depression and anxiety[24,25]. There is a genetic association with psychiatric illnesses for depression and anxiety[26].

Association between multiple (demographic & food) variable and anxiety, depression:
A multivariate analysis of different variables of depression and anxiety using Odds Ratio (95% CI) showed that marriage, in relation with other factors, was a risk of getting more depressive and anxiety symptoms in females who participated in this study, also a university level of education was significantly associated in both depression and anxiety while the average level in socioeconomic status was significantly associated in depression only. High socioeconomic state appeared to be a risk factor of having symptoms of anxiety, this may be due to more working hours or more difficult jobs. After adjustment of confounding factors such as demographic data and other items taken in the food frequency questioner, it was clear that

females consuming dairy products more frequently are protected against experiencing anxiety symptoms in their lives while it did not affect depressive symptoms. Introducing more vegetables in the meals of our study sample decrease depression, similar studies that showed that more fish, vegetable, fruit, and dietary fiber utilization had been associated with better self-apparent health, predominantly mental health[27,28]. Consuming fat-containing food with rebellious attitude increase anxiety but it is not disturbing the state of depression. Other food items taken in our food frequency questioner which are fruits, fast food, sugar, meat, bread, and fluid intake have no association with common mental health disorders measured in our study. Lastly, misrepresenting is undocumented error data in prospective or retrospective studies of nutritional assessment using self-reported diet consumption archives. Subsequently, a dietary introduction has the main effect on health; diet is a key community health awareness[29].

Conclusion

The study showed that the relationship between anxiety and depression not described by age group, socioeconomic grade, learning, or way of life performances other than a diet;

*ingestion of more vegetables was significantly associated with decreasing depression in women attending PHCCS of Baghdad/Al-Rusafa health directorate.

*Dairy product consumptions considered as a protective factor against experiencing anxiety, while more fat in the diet was associated with more anxiety.

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