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Assessment of Mediterranean Diet Regimen Knowledge among University Employees with Functional Gastrointestinal Disorders

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ABSTRACT

Objective(s): To assess knowledge-related Mediterranean diet regimen among the University of Baghdad employees' with functional gastrointestinal disorders.

Methods: A cross-sectional design was carried out at the University of Baghdad in Bab-Almudam region for the period between August 20th 2022 to November 20th 2022. A non-probability sampling was used among (80) employees with functional digestive system disorders. A study instrument was constructed to collect data of knowledge-related Mediterranean diet regimen, which consists of two parts. The first part: socio-demographic characteristics such as: (age, gender, marital status, level of education, living arrangement) and the second part related to employees knowledge: a (45) questions divided into three domains: a (20) questions on the functional digestive system disorders; 13 questions regarding Mediterranean diet; and a (12) questions about the effect of the Mediterranean diet on functional gastrointestinal disorders. Data were analyzed using IBM SPSS version 25. Descriptive and Inferential statistics were utilized to summarize the results.

Results: The study indicated that employees had knowledge deficits (95%) about the Mediterranean diet regimen.

Conclusion: The study showed that there is a lack of employees' knowledge about the Mediterranean diet regimen.

Recommendations: The study recommends establish Mediterranean diet educational programs for persons with functional digestive disorders to learn how to deal with these disorders, and to improve their adherence to treatment and a healthy diet, in cooperation with the Nutrition Research Institute.

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تقييم المعارف بنظام حمية البحر الأبيض المتوسط الغذائية بين موظفي الجامعة المصابين باضطرابات الجهاز الهضمي الوظيفية

المستخلص

الهدف: لتقييم المعارف المتعلقة بنظام حمية البحر الأبيض المتوسط الغذائية بين موظفي جامعة بغداد المصابين باضطرابات الجهاز الهضمي الوظيفية.

المنهجية: تم اجراء دراسة مقطعية في جامعة بغداد مجمع كليات باب المعظم للفترة من من ٢٠ أب ٢٠٢٢ ولغاية ٢٠ تشرين الثاني ٢٠٢٢. تم اختيار عينة غير احتمالية تتكون من (٨٠) موظف يعانون من بضطرابات الجهاز الهضمي الوظيفية. تم بناء استبانة خاصة لتقييم المعارف المتعلقة بحمية البحر الأبيض المتوسط تكونت من جزئين: الجزء الاول: المتغيرات الديموغرافية مثل: (العمر والجنس والحالة الاجتماعية ومستوى التعليم وترتيب المعيشة) ؛ والجزء الثاني خاص بمعارف الموظفين و الذي يتكون من (٤٥) سؤال مقسم الى ثلاث محاور: المحور الأول معارف الموظفين حول أضطرابات الجهاز الهضمي الوظيفية والذي يتكون من (٢٠) سؤال؛ والمحور الثاني معارف الموظفين حول حمية البحر الأبيض المتوسط الغذائية والذي يتكون من (١٣) سؤال؛ والمحور الثالث معارف الموظفين حول تأثير حمية البحر الأبيض المتوسط على اضطرابات الجهاز الهضمي الوظيفية والذي يتكون من (١٢) سؤال. تم تحليل البيانات من خلال استخدام برنامج الحزمة الإحصائية للنسخة ٢٥. تم استخدام نهج تحليل البيانات الإحصائية الوصفي والاستقرائي.

النتائج: آظهرت نتائج الدراسة إلى أن المشاركين لديهم نقص في المعرفة بنسبة (٩٥٪)حول حمية البحر الأبيض المتوسط الغذائية.

الاستنتاجات : بينت الدراسة ان هناك نقص في معارف الموظفين المصابين بأضطرابات الجهاز الهضمي الوظيفية حول حمية البحر الأبيض المتوسط الغذائية.

االتوصيات: توصي الدراسة بأجراء برامج تعليمية خاصة بحمية البحر الأبيض المتوسط للأشخاص المصابين بأضطرابات الجهاز الهضمي الوظيفية لمعرفة كيفية التعامل مع هذه الاضطرابات، وتحسين التزامهم بالعلاج والنظام الغذائي الصحي بالتعاون مع معهد بحوث التغذية.

الكلمات المفتاحية: معارف , اضطرابات الجهاز الهضمي الوظيفية, حمية البحر الأبيض المتوسط الغذائية، الممرضين.

Introduction

Functional gastrointestinal disorders (FGIDs) are common in the general population, affecting up to 1 in 3 people, functional gastrointestinal disorders are characterized by persistent symptoms referable to the middle or lower abdomen in the absence of other diseases or structural abnormalities, which account for the symptoms[1]. Each year, there is at least 7 million patients around the world who are

affected by this disease leads to hundreds of thousands of deaths[2]. Gastrointestinal symptoms are popular and can lead to numerous economic and social circumstances. According to a study from UN estimates that eleven percentages people suffer from long-term digestive condition, with a prevalence rate of thirty-five percentages for elderly. In 2022, an estimated 60 to 70 million Americans are affected by gastrointestinal (GI) diseases and disorders for each year. The valued annual U.S. cost associated with GI conditions is concluded 140 billion dollars[3]. GI diseases are connected to any combination of gut microbial changes, visceral hypersensitivity, altered mucosal and immunological function, and central nervous system changes [4]. Rome III criteria classified these conditions are categorised as functional bowel diseases not otherwise defined, functional bloating, functional constipation, functional diarrhoea, and irritable bowel syndrome (IBS), functional dyspepsia affects the upper gastrointestinal tract, and symptoms may include early satiety, epigastric pain, and postprandial fullness. These functional gastrointestinal disorders associated with reduced health-related quality of life (HRQOL), increased health care utilization and impaired work productivity[5]. FGIDs have been discovered to be extremely prevalent in the population despite the adoption of several diagnostic definitions and criteria. Estimates of the prevalence of IBS symptoms range from 3 to 20%; those of chronic constipation can reach 27%; those of chronic diarrhea can reach 27%; and those of dyspepsia can reach 2.5% to 41% [6]. Irritable bowel syndrome affects a significant number of people and results in significant financial and emotional burdens[7]. Due to the prevalence of FGIDs and the dearth of effective pharmaceutical treatments, interest in using complementary and

alternative therapy has increased. [8]. Experienced dieticians offered first-line therapy, which included fundamental dietary recommendations like including frequent meals, attaining a nutritious food, plus avoiding food stimulus (such as alcohol and caffeine). When patients were normally adhering to a healthy food and incorporating "low fermentable oligosaccharides, disaccharides, monosaccharides, and polyols. (FODMAP) dietary" guidance, second line medication was applied. Patients were encouraged to try probiotic therapy if they had previously tried the low FODMAP diet without results [9]. The nurse offers support to the patient and family as they learn to accept and manage this ongoing predicament.

Comprehensive nursing assessments gather health history, including details on chronic illnesses, food habits, bowel habits and issues, and current drug regimen. This study approach conducted by similar study that assessed frequency of food intake and habits for patients diabetic mellitus can help program designers create health education materials about how to eat well while pregnant by identifying their needs and problems [10].

According to some evidence, the Mediterranean diet (MD) may help to reduce functional gastrointestinal symptoms by increasing consumption of fibre and antioxidants while lowering intake of saturated fats and oligosaccharides [11]. One of the best dietary paradigms is the Mediterranean diet. The adherence to Mediterranean diet, measured through types of scores, which results in a decrease of significant diseases, such as cancer, metabolic and cardiovascular disorders, neurological illnesses, type 2 diabetes, and allergies, are increasing in frequency. Many of the MD's distinguishing characteristics include practical qualities that promote health and wellness. In order to study the connection between the risk of acquiring chronic diseases and diet, the dietary "pattern" has recently become popular [12]. Mediterranean diet is capable for reducing the risk of death and lower the prevalence of some of the most serious illness states, but it can also predict a better and longer life with greater psychological wellbeing and subjective health status [13]. Another study has the same approach and conducted an Mediterranean diet regimen instructional program on pateints with hepatic cirrhosis to assess their knowledge[14]. Theoretical potential benefits of Mediterranean diet may be related to foods' high levels of antioxidants and polyphenols, which have anti-inflammatory properties, as well as to the gut microbiome's increased variety [15].

Methods

Study design

A cross-sectional study design was conducted to assess knowledge-related Mediterranean diet Regimen among the University of Baghdad employees' with functional gastrointestinal disorders for the period between August 20th 2022 to November 20th 2022.

Study setting

This study conducted in the University of Baghdad colleges in Bab – Almudham region (College of Arts, College of Languages, College of Islamic Sciences and College of Education, Ibn-Rushd for Humanitarian Sciences).

Study Sample and sampling

A non-probability sampling of (80) employees with functional gastrointestinal disorders (FGID). The sample size is determined using a single population proportion formula, taking into account the following assumptions: = total population (nurses) = 272, 95% confidence, 5% error 5/100 = 0.05; if N = 272, n = sample size E = margin of error n = N / [1 + (N) (E) 2] n = 272/ [1+200 (0.05)2], n = 272/ [1+412 (0.0025)], n = 272/ [1 +0.3325], n = 3187/ 1.3325 n = 160 The total study sample consists of 160 participants, 80 participants in each group. The Rao soft program was used with a specific confidence interval of 5% and a confidence level of 95% to determine the sample size. This study conducted in the University of Baghdad colleges in Bab – Almudham region (College of Arts, College of Languages, College of Islamic Sciences and College of Education, Ibn-Rushd for Humanitarian Sciences). The sample was chosen from these places because

I found that the sample had many gastrointestinal diseases due to the many psychological pressures from continuous work and the second reason the sample is from the humanitarian specialties that lack scientific medical information.

Data collection and the study Instrument

Data collection took place in the meeting hale and libraries for all employees. A structured questionnaire was utilized for collecting the data to achieve the purpose of the study. The questionnaire started with a brief statement concerning the purpose of the study, informed consent, and followed by two parts. Part one is the demographic, which consists of Five items related sociodemographic characteristics on their age, gender, marital status, level of education, living arrangement. The second part consists of (45) questions divided into three sections namely: employees' knowledge on the functional digestive system disorders, which consists of (20) questions; employees' knowledge on the Mediterranean diet, which includes of (13) questions; and the employees knowledge regarding the effect of "the Mediterranean diet on functional gastrointestinal disorders", with (12) questions. items related knowledge concerning GID. questions were developed by researcher based on the existing resources from previous study related to topics of current study, review of literature ,Google scholar.

Validity and reliability of instruments

The reliability of the questionnaire was confirmed through a pilot study by gathering data from 10 employees and executing tests, and the validity of the questionnaire was determined through (14) experts to achieve valid and make the questions more accurate. Them was selected from multiple specialties of nursing branches close to the core of the research. After the test is given four weeks later, the test is finally retaken educational program applicator after complete test retest and find on result. The employees in pilot study were excluded from original sample of study. Determination of reliability of the scale items was based upon the internal consistency which is indicated and measured by coefficient alpha or Cronbach alpha and stability (test-retest) measured by Correlation coefficient (r) as aspects of reliability, recommended by (Sousa and Rojjanasrirat, 2011; Beaton et al., 2000; Polit, and Hungler, 1999) and estimation of lower standard bound was according to (LoBiondo-Wood and Haber, 2014). The Cronbach alpha reliability was (0.85) for knowledge of MED diet and FGIDs. The result indicated that the questionnaire format was adequately reliable through Cronbach alpha.

Ethical considerations

Ethical approvals for this study were obtained from the College of Nursing. The researcher explained the study's overall purpose and how to complete the questionnaire to the study participants. The researcher instructed participants that the collected data will be concealed and safe during and after their participation in the study. The researcher also informed study participants that their names will be kept anonymous in the study's introduction, publishing, and/or subsequent publication. The study was conducted after the Ethics Committee's approval (decision no: 27106- 25/11/2023) was obtained from the University of Baghdad/College of Nursing, Clinical Research Ethics Committee, institutional permission from the Faculty of Nursing, and from the selected hospitals ethical boards before data collection began. The employee included in the sample were given the necessary information about the study, and their written consent was received. Participation in the study was voluntary. Therefore, the employee was informed that the information they give will be kept confidential and that they can withdraw from the study at any stage whenever they wish to do so.

Statistical analysis

Data were analyzed utlizing SPSS version 25 and the descriptive and inductive statistical data analysis method was used (Frequencies and Percentage (%), Mean and Standard Deviation, Inferential Data Analysis: this approach is performed by independent sample t test, Paired t-Test, Chi square Test, Significance Level.

Results

Table 1. Employees Socio-demographic Characteristics and Clinical Data

Characteristics	Study Group (N=٨0)		
	Groups	**F.***	**%**
1.Gender	Male	٢٤	٣٠,٠
	Female	٥٦	٧٠,٠
2.Age	20-29	٦	٧,٥
	30-39	٢٠	٢٥,٠
	40-49	٢٨	٣٥,٠
	50-above	٢٦	٣٢,٥
	MS±SD = 2.93±.938		
3.Educational level	Primary school	٤	٥,٠
	Tertiary school	٦	٧,٥
	Secondary School	١٠	١٢,٥
	Diploma	٣٧	٤٦,٣
	Bachelor & above	٢٣	٢٨,٨
4.Marital status	Single	11	13.8
	Married	61	76.3
	Widowed	2	2.5
	Divorced	٥	٦,٣
	Separated	١	١,٣
5. **Living Arrangement**	Own a house	68	85.0
	Rent a house	12	15.0

N=Number, **f**= Frequency, **%=** Percentage, **SD**= Standard deviation.

Table 1 shows that majority of the sample was female (70%), 46.3% held a diloma degree, 76.3% of them were married and most of the participants (85%) were own a house.

Table 2. Employees' Knowledge about the Mediterranean Diet Regimen.

Levels of Knowledge	(N= 80)			
Mediterranean diet Knowledge	**F**	**%**	**M**	**SD**
Poor	78	97.5%	1.15	0.36
Fair	2	2.5%		
Good	0.0	0%		
FGID Knowledge			**M**	**SD**
Poor	80	100%	1.14	0.34
Fair	0.0	0%		

Good	0.0	0%		
Effect of Mediterranean diet on the FGIDs			**M**	**SD**
Poor	79	98.8%	1.14	0.34
Fair	1	1.3%		
Good	0	0%		

F= Frequency, **%**= Percentage, **M**= Mean, **SD**= Standard deviation, Level of Assessment= 1-1.33 = Poor, 1.34-1.66= Fair, 1.67-2= Good.

Table (2) indicates that 95% of employees having poor level of knowledge on the Mediterranean diet with a mean score of 1.15 (0.36). Surprisely, none of the study participants have a good knowledge regarding Mediterranean diet regimen. This table also showed that the majority (100%) of employees have poor level of knowledge about FGID with mean of score= 1.14 (0.34). Furthermore, this results in this table highlight a poor level of knowledge about the effect of Mediterranean diet on FGIDs with a mean score of 1.14 (0.34). Again, none of the study participants have a good knowledge on the effect of the "Mediterranean diet" on FGID.

Table 3. Relationship between Sociodemographic and Employees General Knowledge levels

Socio-demographic and clinical variables	**Knowledge level**		
	Chi-square	**P value**	**Sig.***
Gender	.621	.279	NS
Age groups	1.108	.094	NS
Marital status	1.072	.866	NS
Educational level	1.326	0.019	S
Living Arrangement	.531	.708	NS

***Sig**= Significant levels, **NS**= non-significant, **S**= Significant, **P value**≤ 0.001.

Table (3) indicates no significant association between sociodemographic and employees knowledge except for educational level with significant relationship with the level of knowledge at p value≤0.001.

Discussion

The study findings revealed that 35% of employees were within the age of 40 and 49 years). This result disagree with results of research reported that the high percentage (36.7%) of the sample were at the age (50 – 69) years [14]. In terms of gender, the results showed that females were represented the majority with (70%). This result is agreed with the study was carried-out in Sri Lanka, reported that are 87% of patients involved in this study were females [16]. This also agree with another study conducted in Iraq indicated that more than half of patient' 53.3% were in the ages between (65 and over and males represented (56.2) of them [17]. As regards to marital status, the study found that most employees were married, and they are accounted (76.3%). This result is agreed the study was conducted in Gaborone, Botswana illustrated that the majority of patients were married 41.3%[18]. Similarly, this agree with a study conducted in Iraq that 53.3% of the participants were in a marriage[19]. Regarding educational attainment, the results showed that (46.3 %) of the study employees were held diploma degree. This result is agreed the study is implemented in South Africa found the majority of participants (73.2%) hold a diploma degree[20]. However, the result is disagree with the outcome of research implemented in Iraq Secondary school has been recognized as the educational level with

the highest percentage (24%) of the employees [21]. The results indicates that the overall assessment of employees' knowledge was at poor level. This result is agreed in the study carried-out in Al-Basra Governorate stated that the patients knowledge for diet and medication was poor[22]. These result is also agreed with a study conducted in Baghdad Teaching Hospitals that the participants knowledge concerning hemodialysis information were poor [23].

Furthermore, this study indicates no significant relationship between socio-demographic and knowledge variables except educational level had high significant association with the level of knowledge at p value ≤ .01. Regarding their level of education of employees, the findings of the present study showed that there were highly significant association with knowledge level and level education of employees at p value ≤ 0.01

This also agree with another study conducted in Iraq revealed in their study, which was conducted in Gastroenterology and Hematology Teaching in Baghdad City on 30 patients. That there were statistical differences between levels of education patient's and the instruction program[24].

The results of the current study showed that employees have a low level of knowledge towards FGIDs, Mediterranean diet regimen before applying in the educational program. The researcher opinion the level of education plays a key role in acquiring knowledge about FGIDs, Mediterranean diet regimen, by following the medical programs shown on television, articles published on social media pages enhance the level of knowledge even if individuals do not have medical experience or from the medical and health staff (Researcher).

Conclusion

Based on the study results, the study summed up that the level of employees' knowledge concerning Mediterranean diet regimen was low. Also, there are significant relationships between employee's knowledge and educational level.

Recommendations

Establishing educational programs in collaboration with the Nutrition Research Institute will help people infected with functional digestive problems understand how to manage these conditions and improve their determination to follow treatment and a healthy diet.

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Conflict of interest

None to declare.

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Data availability

The data supporting the findings of this study are not publicly available due to ethical and privacy considerations but may be made available from the corresponding author upon reasonable request and with appropriate approval.

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