



## Effectiveness of Instructional Program on Patients' Nutritional Habits for Patients with Peptic Ulcer

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### AbSTRACT

**Objectives:** The aim of the current study is to determine the effectiveness of the instruction program on nutritional habits of patients with peptic ulcer, and to find out the relationship between these habits and their socio- demographic characteristics.

**Methodology:** A quasi-experimental design study was carried out at Al-Diwaniya Teaching Hospital. non-probability sampling which including 30 patients for the study group and 30 patients for the control group. The program and study instrument were prepared from a literature review and previous research, the validity of the questionnaire was determined through a panel of (11) experts and the reliability through a pilot study, the questionnaire's reliability was determined by computing the Alpha Correlation Coefficient to determine the instrument's internal consistency, the statistical and analyzed the data was conducted through the descriptive and inferential statistical analysis procedure.

**Results:** The study's findings showed that the instruction program had a positive effect on patients' nutritional habits, and a significant statistical association between the patient's employment, level of education, and monthly income and the effectiveness of the instruction program regarding nutritional habits.

**Conclusion:** The instruction program had a positive effect on patients with peptic ulcers and changed their nutritional habits among the study group.

**Recommendations:** The study recommends increasing the patient's knowledge regarding nutritional habits and explaining diet through periodic seminars, television programs, and social media and the use of the presents program for the all patients with peptic ulcer.

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## فاعلية برنامج ارشادي في العادات الغذائية لمرضى القرحة الهضمية

### المستخلص

**الأهداف:** الهدف من الدراسة الحالية هو تحديد فعالية برنامج ارشادي حول العادات الغذائية لمرضى القرحة الهضمية، ومعرفة العلاقة بين هذه العادات وخصائصهم الاجتماعية والديموغرافية.

**المنهجية:** دراسة تصميم شبه تجريبية أجريت في مستشفى الديوانية التعليمي. أخذ عينات غير احتمالية والتي شملت 30 مريضاً لمجموعة الحالة و30 مريضاً للمجموعة الضابطة. تم إعداد البرنامج وأداة الدراسة من مراجعة الأدبيات والبحوث السابقة، وتم تحديد صحة الاستبيان من خلال لجنة مكونة من (11) خبيراً والموثوقية من خلال دراسة تجريبية، وتم تحديد موثوقية الاستبيان من خلال حساب معامل ارتباط ألفا إلى تحديد الاتساق الداخلي للأداة، تم إجراء البيانات الإحصائية وتحليلها من خلال إجراء التحليل الإحصائي الوصفي والاستنتاجي.

**النتائج:** أظهرت نتائج الدراسة أن البرنامج الارشادي كان له تأثير إيجابي على العادات الغذائية للمرضى، ووجود ارتباط إحصائي معنوي بين وظيفة المريض ومستوى تعليمه ودخله الشهري وفعالية برنامج الارشادي فيما يتعلق بالعادات الغذائية. **الخلاصة:** كان للبرنامج الارشادي أثر إيجابي على مرضى القرحة الهضمية وغيرت عاداتهم الغذائية بين مجموعة الحالات. **التوصيات:** توصي الدراسة بزيادة معرفة المريض بالعادات الغذائية وشرح النظام الغذائي من خلال الندوات الدورية والبرامج التلفزيونية ووسائل التواصل الاجتماعي واستخدام برنامج العروض لجميع مرضى القرحة الهضمية. **الكلمات المفتاحية:** برنامج ارشادي، مرضى القرحة الهضمية، عادات غذائية.

### Introduction

Peptic ulcer is effects on quality-of-life QOL it can have significant impact on his/her health, the compliance of healthy balanced diet regimen by limiting saturated fat and avoid foods that irritate like chili powder, garlic, black pepper, caffeine that cause the stomach to create acids. Alcohol should also be avoided because it has the similar impact on the stomach. Peptic ulcers should be treated with a diet rich in fruits and vegetables and low in strong spices and flavors <sup>(1)</sup>.

Patients with peptic ulcers are recommended to eat smaller, more frequent meals (for example, six little ones per day), eat slowly, sit up straight after meals, avoid consuming food or liquids two hours before night, and abstain from alcohol. PUD patients may find it helpful to keep a food diary and record their symptoms in order to keep track of potential triggers that they might eliminate from their diet <sup>(2)</sup>.

The Gastroenterology Endoscopic Department -Al-Kindy Teaching Hospital – Baghdad-Iraq (2019), mentioned that dietary

habits play a significant role in the development of gastrointestinal disorders. Also, hot and spicy foods are statistically associated with GI disorders. Fruits and vegetables contain antioxidants, and numerous studies have indicated that they are effective in preventing GI disorders. However, other studies have produced insignificant statistically significant results.<sup>(3),(4)</sup> Thus, the aim of the current study is to find out the effectiveness of the instruction program on nutritional habits for patients with peptic ulcer, and to find out the relationship between patients' nutritional habits and their socio-demographic characteristics.

### **Methodology**

A quasi-experimental design study was carried out on patients with peptic ulcer who are attending Al-Diwaniya Teaching Hospital between January 17th, 2022, to May 20th, 2023.

Non-probability sample of 30 patients for the study group and 30 patients for the control group were selected for the purpose of the study.

The program and study instrument were prepared from a literature review and previous research. The study instrument consists of four sections, the first section is the socio-

demographic consist of 7 items of age, gender, occupation, degree of education, marital status, place of residence, and monthly income. The section two is a medical history consist of 6 items (blood group, family history of "peptic ulcer disease" duration of the disease, type of medication, type of ulcer and having a chronic disease). Section three is the smoking habit which consist of one items about the smoking. Section four is about the nutritional habits included (9) items. Rating of each item was scored as (3) for always, (2) for Sometimes, and (1) for never<sup>(4)</sup>.

The validity of the questionnaire was determined through a panel of (11) experts, and the reliability through a pilot study, the questionnaire's reliability was determined by Alpha Correlation Coefficient to determine the instrument's internal consistency, the statistical analysis of data was conducted through the descriptive and inferential statistical analysis approaches using frequencies (F), percentages (%), means (MS), and standard deviations (SD)) and inferential statistical analysis approaches were used to assess and evaluate the study's findings.

## Results

**Table (1): Distribution of the Nurses (Study and Control group) According to their Socio-demographic Characteristics (No.=30)**

Socio- demographic Characteristics		Study Group		Control Group	
Variables	Categories	Frequency	Percent	Frequency	Percent
Age	20-30	10	33.3	8	26.7
	31-40	5	16.7	5	16.7
	41-50	4	13.3	4	13.3
	More than 50	11	36.7	13	43.3
	Mean ± (Std.Dev.)	42.56 ± 15.19		44.06 ± 14.11	
Gender	Male	12	40.0	12	40.0
	Female	18	60.0	18	60.0
Employment	House wife	9	30.0	13	43.3
	Employee	5	16.7	6	20.0
	Full-time student	5	16.7	5	16.7
	Free worker	3	10.0	5	16.7
	Retired	6	20.0	0	0
	Not work	2	6.6	1	3.3
Level of education	Read and write	9	30.0	9	30.0
	Primary school	6	20.0	5	16.7
	Secondary school	7	23.4	5	16.7
	Diploma	2	6.6	3	10.0
	Graduate	6	20.0	8	26.6
Marital Status	Single	5	16.7	9	30.0
	Married	25	83.3	21	70.0
Residency	Urban	16	53.3	20	66.7
	Rural	14	46.7	10	33.3
Monthly income	Sufficient	4	13.3	4	13.3
	Barely Sufficient	7	23.4	7	23.4
	Not Sufficient	19	63.3	19	63.3

Table (1) show the socio-demographic characteristics of study and control group which as the high percentage for age at more than 50 years old was 36.7%, and 43.3% respectively. Females was high percent in both study and control group, which as 60%, high percent 30% of study group and 43.3% of the control group was housewives. High percent of patient for study and control group was 30% read and write. High percentage for study and control group was married at 83.3% and 70% respectively, high percent 53.3%, and 66.7% of study and control group living in urban respectively, 63.3% of study and control group was not sufficient income monthly.

**Table (2): Distribution of the Study and Control Groups by their Medical History (No.=30).**

Nedical History		Study group		Control group	
Variables	Categories	Frequency	Percent	Frequency	Percent
<b>Blood Group</b>	<b>A +</b>	4	13.3	4	13.3
	<b>A -</b>	1	3.3	1	3.3
	<b>B +</b>	5	16.7	5	16.7
	<b>AB +</b>	4	13.3	5	16.7
	<b>O +</b>	16	53.3	15	50
<b>Family history of peptic ulcer</b>	<b>NO</b>	22	73.3	24	80
	<b>Yes</b>	8	26.7	6	20
<b>Degree of consanguinity</b>	<b>First degree</b>	8	26.7	4	13.3
	<b>Second degree</b>	0	0	2	6.6
<b>How long have you had a peptic ulcer</b>	<b>Less 5 year</b>	20	66.7	20	66.7
	<b>5-10 year</b>	8	26.7	8	26.7
	<b>More 10 year</b>	2	6.7	2	6.7
<b>Medication type</b>	<b>Zantac</b>	11	36.7	4	13.3
	<b>Omeprazole</b>	18	60.0	24	80
	<b>Lansoprazole</b>	1	3.3	2	6.7
<b>Do you have chronic diseases</b>	<b>No</b>	21	70.0	22	73.3
	<b>Yes</b>	9	30.0	8	26.7
<b>Chronic diseases</b>	<b>Diabetes</b>	3	10.0	2	6.6
	<b>Hypertensive</b>	6	20.0	6	20.1

Table (2) shows the patient's medical history, which as 53.3% and 50% of the study and control group was their blood group (O+) respectively, 26.7%, and 20% of the study and control group, have a history of peptic ulcer respectively. There were 26.7% and 13.3 % for the study and the control group who had a family history of first-degree disease respectively. Since five years ago, 66.7% of the study and control groups have had the condition. 60% and 80% of the patients for the study and control group use Omeprazole as a treatment for peptic ulcers respectively. 30% and 26.7% of the study and control group have other chronic disease respectively, and 20% and 20.1% of them have hypertension for study and control respectively.

**Table (3): Assessment of Smoking Habit for Study and Control Groups (No.=30).**

Characteristics		Study Group		Control Group	
Variables	Categories	Frequency	Percent	Frequency	Percent
Smoking	No	25	83.3	27	90.0
	Yes	5	16.7	3	10.0
Number of cigarettes per day	15	1	3.3	1	3.3
	20	3	10.1	2	6.7
	40	1	3.3	0	0
Number of years of smoking	3	1	3.3	0	0
	5	1	3.3	1	3.3
	10	3	10.1	2	6.7

Table (3) shows that 16,7%, and 10% of the study and control group were smoker respectively, and the duration of smoking was 10 years for study and control group which as 10.1%,6.7% respectively, and the number of cigarettes for both groups consumed per day was twenty cigarettes for both groups which as 10.1%,6.7% respectively.

**Table (4): Assessment of Nutritional Habits for study and Control Group at Pre and Post-test Periods**

NO	Items	Study Group						Control Group					
		Pre			Post			Pre			Post		
		M.S	Std. Dev.	Level	M.S	Std. Dev.	Level	M.S	Std. Dev.	Level	M.S	Std. Dev.	Level
1.	You eat three main meals a day.	1.20	.407	L	2.47	.507	H	1.40	.498	L	1.37	.490	L
2.	Eating at regular fixed times	1.23	.430	L	2.50	.509	H	1.43	.504	L	1.40	.498	L
3.	chew food well	1.80	.407	M	2.30	.466	M	2.27	.450	M	2.17	.531	M
4.	Avoid spicy foods and chili	1.23	.430	L	2.33	.479	M	1.33	.479	L	1.33	.479	L
5.	Avoid foods that cause acidity, such as lemons and oranges	1.33	.479	L	2.37	.490	H	1.33	.479	L	1.30	.466	L
6.	Oils are used in cooking food	1.93	.691	M	2.37	.490	H	2.10	.403	M	2.10	.403	M
7.	Avoid drinking coffee, tea or soft drinks	1.33	.479	L	2.40	.498	H	1.37	.556	L	1.33	.547	L
8.	Eat light meals between the three main meals	1.27	.450	L	2.40	.498	H	1.33	.547	L	1.30	.535	L
9.	Avoid hot food and drinks	1.33	.479	L	2.43	.504	H	1.37	.615	L	1.37	.615	L
<b>Mean of means</b>		1.407	.143	L	2.396	.393	H	1.548	0.503	L	1.519	0.507	L

"MS: Mean of Scores L=Low (1-1.66)M= Moderate:(1.67-2.33) ,H= High (2.34-3)", SD: standard deviation

Table (4) The nutritional habits of patients with peptic ulcers for the study group changed after applying the instruction program, which as the mean of means was 1.4 at pre test and improved to 2.3 at post test, than the control group not change at pre and post test, which was 1.5.

**Table (5): Effectiveness of Instructional Program on Patients’ Nutritional Habits for Patients with Peptic Ulcer**

	Periods of measurements	Paired measurement study group				
		Mean	Std. Dev.	t-value	df	P ≤0.05
Nutritional habits study group	Pre-test	1.4074	.14394	13.180	29	0.001 HS
	Post-test	2.3963	.39331			
Nutritional habits control group	Pre-test	1.5481	.34885	1.610	29	.118 NS
	Post-test	1.5185	.32797			

**SD: standard deviation, T-value= observed T-test; df=Degree of Freedom; P-value= Probability value; HS=Highly Significant (P-value < 0.05); NS=Non-significant (P-value ≤ 0.05)"**

The result of table (5) revealed that there were statistical significant differences between pre-test and post-test for the study group regarding nutritional habits at the P ≤0.05level.As for the control group, there were no statistically significant differences between the pre- and post-test.

**Table (6): Relationship between the effectiveness of Instructional Program on Patients’ Nutritional Habits for Patients with Peptic Ulcer and their Gender.**

Independent Samples Test							
	Gender	N	Mean	Std. Deviation	t	df.	P ≤ 0.05
<b>Nutritional habits</b>	Male	12	2.3056	.41608	1.033	28	.310 NS
	Female	18	2.4568	.37706	1.012	22.063	.322 NS

**N: number , SD: standard deviation , "T-value= observed T-test; df=Degree of Freedom; P-value= Probability value; HS=Highly Significant (P-value < 0.05); NS=Non-significant (P-value ≤ 0.05)"**

Table (6) Shows that there were no statistical significant differences between the instructional program domain and patients’ gender at P ≤0.05level.

**Table (7): Association between the Effectiveness of Instruction Program and Patient Age, ,Employment ,Level education ,Marital status ,Resident, Monthly income ,Duration of diseases and other Chronic diseases.**

Variable		Sum of Squares	df	Mean Square	F	P ≤ 0.05
Age	Between Groups	3.319	23	.144	.742	.723 NS
	Within Groups	1.167	6	.194		
	Total	4.486	29			
Employment	Between Groups	2.715	5	.543	7.361	.001 HS
	Within Groups	1.771	24	.074		
	Total	4.486	29			
Level education	Between Groups	3.636	4	.909	26.732	.001 HS
	Within Groups	.850	25	.034		
	Total	4.486	29			
Marital status	Between Groups	.249	1	.249	1.645	.210 NS
	Within Groups	4.237	28	.151		
	Total	4.486	29			
Resident	Between Groups	.988	1	.988	7.909	.009 HS
	Within Groups	3.498	28	.125		
	Total	4.486	29			
Monthly income	Between Groups	1.009	2	.505	3.918	.032 S
	Within Groups	3.477	27	.129		
	Total	4.486	29			
Duration diseases	Between Groups	.520	2	.260	1.770	.190 NS
	Within Groups	3.966	27	.147		
	Total	4.486	29			
Other chronic diseases	Between Groups	.019	1	.019	.118	.734 NS
	Within Groups	4.467	28	.160		
	Total	4.486	29			

d.f: degree of freedom; F:Tabulated F; P-value= Probability value; HS=Highly Significant (P-value < 0.05); NS=Non-significant (P-value ≤ 0.05)"

Table(7)Shows that there were a significant statistical association between the patient's employment, level of education, and monthly income and the effectiveness of the instruction program regarding nutritional habits .However, there was no significant correlation between the patient's age, marital status, disease duration, or other chronic diseases at P ≤ 0.05 level.



## Discussion

The distribution of the socio-demographic characteristics of present study was high percent of study and control group at age 50 years which of 36.7% , and 43.3% respectively. The majority (60%) of participants were females for both groups and 30% and 43.3%, of them a housewives for both groups respectively.

Regarding the education level the study revealed that (30%) of them read and write for both groups. Also, Highest percentage of them (83.3% and 70.0%)were married for both groups respectively. As well as, (53.3%, 66.7%) living in urban areas for both groups respectively. Regarding monthly income (63.3%) of patients were considering insufficient monthly income for both groups.

A study 2019 conducted at the Elmek Nimir University Hospital in Shendi City, Sudan, on the effects of a program to change people with peptic ulcer disease's lifestyle through self-care. The largest percentage of the study sample were over fifty years old and housewives made up the largest portion of the study group<sup>(5)</sup>.

A study on the socio-demographic profile of Peptic Ulcer patients in A Tertiary Care Teaching Hospital, Dhaka, Bangladesh found that (56%) of patients who had peptic

ulcer disease were within age 41-50 years old and the highest percentage were women<sup>(6)</sup>.

A survey on the general public's knowledge of peptic ulcer illness in Jeddah out off 620 participants in the study(78.1%) were female and (136, 21.9%) were males<sup>(7)</sup>.

During assess the risk factors of peptic ulcer in Arar ,Northern in KSA that the prevalence was higher in female than male 71.2% and 28.8%, respectively<sup>(8)</sup>.

A study conducted at 2019 about nursing instruction guidelines for controlling gastritis among older adult, found that majority of the patients their monthly income is not sufficient. Moreover, more half of them were read and write<sup>(9)</sup>.

A diagnostic study of peptic ulcer diseases in dyspeptic patients by endoscopy section at the University of Gondar Hospital in northwest Ethiopia revealed that (64%) of their participants in the study were married<sup>(10)</sup>.

The medical history of patients with peptic ulcers is a predisposing factor for incidence and deterioration of health status. The medical history of the present sample was 53.3% and 50% of study and control group have blood group (O+)respectively, 26,7%, and 20% of study and control group, have a history of peptic ulcer respectively. Regarding family

history 26.7% and 13.3 % for study and control group who have a family history of first-degree respectively. (66.7%) of study and control groups with less 5 year for the first time since the beginning of the disease. (60% and 80% ) for both study and control groups use Omeprazole as a treatment for peptic ulcers respectively, (30%) and (26.7%) of study and control groups have other chronic disease respectively, and (20%) and (20.1%) of them have hypertension respectively.

A cross-sectional study from Ethiopia on 63 endoscopic confirmed PUD patients and 63 healthy controls to find out association between ABO blood group distribution and peptic ulcer disease. Revealed that PUD trended as being more prevalent among patients with blood group O than other blood group types. It can be explained that the blood group O, H antigen expressed in the gastric mucous membrane is conducive to Helicobacter pylori bacteria attachment, which is recognized as the primary cause of PUD<sup>(5),(11)</sup>.

A study at Al Yarmook Teaching Hospital at endoscopy revealed that 178 people dealing with the following :30 diabetes duration of dyspepsia with a positive H. pylori infection test<sup>(12)</sup>.

Smoking is one of the unhealthy habits that are harmful the digestive system in several ways smokers tend to have more acidity and peptic ulcers than nonsmokers. The current

study revealed that 16,7%,and 10% of study and control group were smoker respectively, and the smoking duration was 10 years for study and control groups as 10.1%,6.7% respectively, and the number of cigarettes consumed per day for both groups was twenty cigarettes as 10.1%,6.7%respectively.

A study conducted about screening and Preponderance of Peptic Ulcer and its Contributing Risk Factors Among Basrah City Residents in Iraq. Conclude there were a link between smoking and a higher risk of developing peptic ulcer disease, and that smoking increased the chance of H. pylori infections<sup>(13)</sup>.

A multiple studies on patients with peptic ulcer mentioned that the smoking play a major role as a risk factors for upper digestive diseases and the occurrence of peptic ulcer perforation and smokers had a PUD prevalence that was around seven times higher than that of non-smokers<sup>(12),(14),(15),(16)</sup>.

Patients with peptic ulcer disease are recommended to have people dealing with the following :30 diabetes more frequently (6 small meals per day, for example), eat slowly to provide time for digestion, stand up straight after meals, avoid consuming food or drink two hours before bedtime, and abstain from alcohol<sup>(2)</sup>. The current study enrolled the study group for instruction program about improve their

nutritional habits. The improvement of program was clear on study group through the total mean, which as 1.40 at pre-test to 2.39 at post-test, while the control group still not changes in of nutritional habits through the total mean which as 1.54 at pre to 1.51 at post.

A study conducted on Lifestyle and Status of Peptic Ulcer among Peptic Ulcer Patients in Borama District, Somaliland. Their results revealed that the peptic ulcer status is influenced by lifestyle factors such as smoking and nutritional habits<sup>(17)</sup>.

A study was conducted about effectiveness of a video education program on food among 50 patients with peptic ulcer disease They concluded that the education program was effective on patient about balance diet<sup>(18)</sup>.

The present study shows a highly significant association between the effectiveness of instruction program and patient employment, level of education, and resident. As well as, a significant association with monthly income. While, no significant association found between the effectiveness of instruction program and patient age, gender, marital status ,duration of diseases , and other chronic diseases at  $P \geq 0.05$ .

These findings agree with a study conducted on , 100 patients in Al-Najaf, Al-Ashraff City, Iraq which found no statistically

significant relationship between the patient's compliance and their gender, age, marital status patient at  $P \leq 0.05$  level<sup>(19)</sup>.

Also, these findings harmonize with findings of study conducted at the Blood Disease and Oncology Center, with no statistically significant relationship between patient age, gender, age, or marital status and the effectiveness of the instruction program at  $P \leq 0.05$  level<sup>(20)</sup>.

Moreover, these findings agree with findings of a study that assessed the effect of health education on the ability of patients with peptic ulcer disease to care for themselves, without significant differences between the two groups in terms of gender, age, marital status<sup>(21)</sup>.

Furthermore these findings coincide with study a bout the impact of health education on the self-care ability of patients with peptic ulcer disease were found no statistically significant relationship between age ,duration of diseases and effectiveness of the education program at  $P \leq 0.05$  level<sup>(21)</sup>.

Additionally these findings parallel with study a bout effectiveness of an instructional program concerning medication adherence which found statistically significant relationship between level of education, resident, monthly income and effectiveness of the education program at  $P \leq 0.05$  level<sup>(22)</sup>.

## Conclusion

The instruction program had a positive effect on the nutritional habits of patients with peptic ulcer.

### Recommendations

The study recommends increasing the patient's knowledge regarding nutritional habits and explaining diet through periodic seminars, television programs, and social media and the use of the presents program for the all patients with peptic ulcer.

### Conflict of Interest

None.

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