Effect of Educational Intervention on Self-Efficacy and Quality of Life among Patients with Chronic Gastritis

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Abstract

Background: Chronic gastritis is a global health issue that is frequently associated with a variety of complications and is a highly prevalent digestive tract disease that affects individuals of all ages worldwide. Chronic gastritis education is beneficial for patients, as it provides them with additional information to enhance their quality of life and self-efficacy. **Aim of the study:** To assess the effect of educational Intervention on self-efficacy and quality of life among patients with chronic gastritis **Design:** A Quasi experimental design was used for conducting the study. **Setting**: The research was conducted in the medical department and medical outpatient clinic at Benha University Hospital, Egypt. **Sample**: A purposive sample of 112 adult chronic gastritis patients divided to 2 equal groups: Intervention group (56 patients) and control group (56 patients) were selected according to inclusion criteria. **Tools:** three tools were utilized for data collection 1) A structured interviewing questionnaire 2) self-efficacy Scale and 3) Quality of Life Scale. **Results** of this trail showed that knowledge, self-efficacy and Quality of Life not significantly different among intervention and control groups pre intervention, while were statistically and significantly different post educational intervention. **Conclusion:** Implementing the educational intervention had a positive and better effect on patients with chronic gastritis evidenced by increased knowledge score, and improved self efficacy and quality of life mean scores among intervention groups than in control group. **Recommendations:** Enhance health education program regarding self-care for patients with chronic and dietary education. Replication of the current study on a large representative sample to achieve generalization of the results.

Key words: Chronic gastritis; educational intervention; quality of life; self efficacy

Introduction

Gastritis is an inflammatory condition that impacts the mucosal lining of the stomach. Alternatively, the inflammation may be patchy in numerous locations or contained within a single region. The inflammation is typically restricted to the mucosa; however, certain forms affect the deeper layers of the gastric wall. chronic and Acute forms of gastritis are distinguished **(Sommers., 2019)**.

In most cases, acute gastritis is caused by a bacterial infection, such as H. pylori bacteria, and manifests rapidly in the short term. Chronic gastritis is the result of the acute gastric mucosa being irritated by certain conditions. For numerous patients, the reduction of gastric acid can be achieved through the consumption of a less acidic diet or the administration of medications. Analgesics can alleviate symptoms, while medications that safeguard the gastric mucosa can prevent the symptoms from deteriorating. Bacterial infections are typically treated with antibiotics **(Shimoji et al., 2021)**.

The presence of chronic inflammatory changes in the gastric mucosa is the diagnostic criteria for chronic gastritis, a clinical gastroenterological disease with a high incidence rate. It may be caused by bacterial infections (such as H. pylori), alcohol consumption, smoking, and NSAIDs. This bacterium weakens the mucous lining of the stomach, allowing stomach acid to contact the stomach tissues below it**.** Chronic gastritis usually causes abdominal pain and heart burn. Besides, feeling of fullness in the abdomen with belching and bloating, nausea or vomiting, and loss of appetite. Sometimes, gastritis may cause stomach bleeding and possibly anemia, possibly leading to vitamin B12-deficiency anemia **(Moini & Chaney, 2019)**.

The long course, slow development, high treatment difficulty and high recurrence rate of this disease have an important effect on the physical health and quality of life of patients. The complexity of chronic gastritis has resulted in a lack of comprehensive understanding of its clinical pathogenesis. In order to prevent recurrence, it is imperative to improve the health education of patients and their families regarding the disease. Additionally, patients should adhere to a healthy lifestyle, which includes a reasonably balanced diet, during clinical therapy **(McCauley et al., 2022)**

Nurses are in a distinctive position to develop interventions that will impact and enhance patients' adherence to their biopsychosocial and educational needs, as well as to provide education and communication to patients with a variety of issues. The evaluation of Health Related Quality of Life (HRQOL) has been implemented as a prominent outcome indicator for patients with chronic diseases **(Azer & Akhondi, 2022)**

Self-efficacy is a term that denotes an individual's assurance in their capacity to manage a chronic health condition or modify a health habit. It is also a necessary condition for behavior change, which influences the level of effort and performance required to achieve a goal. In the event of chronic illnesses, such as gastritis, it plays a substantial role in the establishment and maintenance of healthy behaviors **(Metwaly & Zatton, 2020)**.

Significance of the study

The glandular gastric epithelium atrophys as a result of chronic inflammatory changes in chronic gastritis, but there are no excessive visible erosions **(McCauley et al., 2022)**. The prevalence rate of gastritis in developed countries decreased significantly in comparison to that of developing countries, with 34.7% of the population in developed countries experiencing health issues related to gastritis. 50.8% of the population in developing countries is affected by gastritis on a global scale. However, it has continued to be a substantial health concern. In general, men were more susceptible to developing gastritis than women **(Feyisa & Woldeamanuel., 2021)**.

Adults in Egypt have a high prevalence of H. pylori infection, with rates as high as 90%. The quality of life and self-care efficacy of patients are negatively impacted by the diverse sequences of infection, which encompass asymptomatic colonization of the gastric acute gastritis, mucosa, chronic gastritis, atrophic gastritis, intestinal metaplasia, dysplasia, and cancer **(Fady & Amr., 2022)**.

It is essential to develop intervention strategies that are both scientifically sound and logical for patients who have chronic gastritis. Consequently, it is essential to enhance the health education of patients and their families regarding the disease, and patients should maintain a healthy lifestyle, which includes a reasonable diet, during clinical therapy to prevent recurrence. **(Sun & Nie, 2020)**.

Aim of research:

The purpose of the research was to assess the impact of educational intervention on the quality of life and self-efficacy of patients with chronic gastritis.

Hypotheses:

To fulfill the purpose of the research the following research hypotheses were formulated:

H1: Knowledge score among intervention group may be significantly higher than control group post educational intervention

H2: Self efficacy score among intervention group may be significantly improved than control group post educational intervention

H3: Quality of life score among intervention group may be significantly improved than control group post educational intervention

Subject and methods

Research design:

In order to accomplish the research objective, a quasi-experimental design was implemented. A quasi-experimental design is a type of empirical research that evaluates the causal impact of an intervention on its target population **(Gopalan, Rosinger & Ahn, 2020).**

Research setting:

The research was conducted in medical department at Benha university hospital, Qalyubia governorate, Egypt, to be

continued in medical outpatient clinic for follow up.

Research subject:

Type: Purposive sample of patients with chronic gastritis.

Size: The sample size of patients was determined by utilizing the census report of admissions in the medical department from the previous year from the 2022 Benha University Hospital Census. The sample size was determined using the subsequent formula: **Stephen Thampsons equation (Fearon et al., 2017):**

$$n = \frac{N \times p\,(1-p)}{\left(\left(N-1 \times \left(d^2 \div z^2\right)\right) + p\,(1-p)\right)} = 112$$

- N = Population size is 340
- p = Ratio provides a neutral property of 0.12
- d = Error rate is 0.05
- z = Class standard responding to the level of significance of 1.96

- A total 112 patients with chronic gastritis who were hospitalized in the medical department at the previously mentioned setting. Divided into 2 equal groups, intervention group (56 patients) and control group (56 patients).
- **Sampling technique:** Initially, routine intervention (in form of medication administration and simple instructions regarding dietary regimen) and control group-related assessment were implemented during the first half of the data collection period (the first 2.5 months). In order to mitigate and prevent bias during the sampling process, this approach was implemented. The educational intervention and intervention group assessments were implemented during the second half of the data collection period (e.g., the second 2.5 months).
  - **Inclusion criteria**: Patients diagnosed with chronic gastritis, their age ranged from 21 to 60 years old, both sexes (male and female), have full consciousness and orientation; did not have any communication problems. **While excluded** patients who have another any chronic disease, and who were not willing to participate in the research. In addition to patients who have been diagnosed with psychosis or are currently receiving antipsychotic treatment.

- **Tools of data collection:**

The following tools were used for data collection:

Tool (I): Structured interviewing questionnaire:

This questionnaire was designed by researchers after reviewing recent relevant literatures and scientific references. It consisted of the following three parts to cover the following data:

Part I: Patients' demographic characteristics: This part concerned with the assessment of patients' age, gender, level of education, occupation, marital status, residence and income.

Part II: Patients' medical history: To assess patients' past history as, previous hospitalization, and family history. Patients' present history, in relation to symptoms, causes of gastritis, times since diagnosis, presence of specific health risk behavior and follow up pattern.

Part 3: The Structured Knowledge questionnaire (pre/post-test) was developed by researchers after reviewing the pertinent literature **(Lee et al., 2022; Shatila et al., 2022; Sousa et al., 2022)** and was subsequently agreed upon by a panel of experts to evaluate the knowledge requirements of the subjects in the form of multiple-choice questions. It entails knowledge questions about concept and types of chronic gastritis that comprised (3 multiple choices questions), risk factors and causes of chronic gastritis that comprised (4 multiple choices questions), signs, symptoms and diagnostic methods of chronic gastritis that comprised (5 multiple choices questions), treatment methods of chronic gastritis that comprised (4 multiple choices questions), complications of chronic gastritis and its relieving measures that comprised (5 multiple choices questions), as well as Preventive measures and lifestyle modification that comprised (8 multiple choices questions)

Knowledge scoring system: All knowledge variables weighted as follows: The knowledge questionnaire was scored as a whole with a total score of 29, with the incorrect response being scored as "0"

and the correct response being scored as "1". And converted into percentages, the poor level is defined as < 50% (<15 score), the fair level is 50%-< 75% (15-<22 score), and the good level is ≥ 75% (≥ 22 score).

Tool (II): Self-Efficacy for Managing Chronic Diseases 6-item Scale

The six-item scale is derived from a variety of self-efficacy scales that were adopted form **(Ritter & Lorig, 2014)** for the chronic disease self-management study. It encompasses a range of domains that are common to a number of chronic diseases, such as symptom control, emotional functioning, communication with physicians and role function. The circled number represents the score for each item, which ranges from 1 (not at all confident) to 10 (totally confident). If two consecutive numbers are circled, indicate the lower number (lower self-efficacy). If the numbers are not consecutive, the item should not be scored. The mean of the six items is the scale's score, which ranges from 6 to 60. Please refrain from scoring the scale if there are more than two missing items. A higher number is indicative of a higher level of self-efficacy.

Tool (III): Generic quality of life inventory-74 (GQOL-74)

It was adopted from **Kuang et al. (2005)** and is employed as a comprehensive assessment questionnaire to assess the quality of life of specific populations, including the elderly and chronic patients. The questionnaire comprised 74 items, which encompassed four dimensions: mental function, physical function, life state and social function. Physical function, mental function, and social function are each influenced by five factors, while life state is influenced by four factors. Each dimension of the scale received a total score of 100 points. A high GQOL-74 score indicates a satisfactory quality of life.

Methods

Validity of the tools:

Five experts (three from the medical surgical nursing and nursing faculty at Benha University, and two from the medical department of the Benha University faculty of medicine) verified the information. The tools were evaluated by the expertise for consistency and appropriateness of content , relevance, comprehensiveness ,clarity of sentences, the sequence of items, accuracy, simplicity, and applicability. Their opinions were solicited through an assessment form. Each item was evaluated by the experts as "essential," "useful but insufficient," or "unnecessary." The content was modified in accordance with the opinions of experts regarding its clarity and appropriateness. The instruments were validated.

Reliability of the tools:

In order to assess the internal consistency of the tool, the researcher implemented reliability by administering the same tools to the same subjects under similar conditions on one or more different occasions. The test-retest reliability was assessed by comparing the responses obtained from repeated testing. Using Cronbach's coefficient alpha, the reliability assessments of the knowledge questionnaire were 0.86, the total self-efficacy was 0.88, and the GQOL-74 was 0.89. This serves as evidence that this instrument is highly reliable.

Ethical considerations:

The Ethics Committee of the Faculty of Nursing at Benha University (code REC-MSN-P8) granted primary approval for the conduct of this study. An official authorization was subsequently obtained from the head of the medical departments at Benha University Hospital. Participants were provided with an explanation of the research purpose and were also informed that they had the option to withdraw from the research at any point prior to its conclusion. The participants were requested to sign a consent form after agreeing to participate in the study. Additionally, participants were assured that the information they provided would be kept confidential and used exclusively for the purposes of the study.

Pilot study:

The designed assessment tool and its applicability to the sample were assessed in a pilot study that was conducted on 10% of the sample (11 patients). The objective was to determine the time necessary to finish the sheets and to identify any obstacles or issues that may have occurred during the data collection process. The requisite modifications were subsequently implemented. Subjects who participated in

the pilot study were excluded from the main trail sample.

Field of work

Data were collected in the following sequence:

After the purpose of the research was explained to the relevant authorities, official permission to conduct the research was obtained. In order to ensure confidentiality, explain the study's purpose, and obtain informed written consent, structured interviews were conducted individually with patients who were eligible for the research and met the inclusion and exclusion criteria. Data collection commenced in March 2023 and continued for nine months until December 2023.

Procedure:

The educational intervention comprised the following phases:

A- Assessment phase:

The baseline data of patients with chronic gastritis was collected using all research tools through group interviews prior to the implementation of an educational intervention. The duration of this interview was approximately 30 to 45 minutes.

B- Planning phase:

In order to aid chronic gastritis patients in comprehending the disease, researchers developed (Supportive material) a guide booklet that includes information on the following: definition, types, risk factors, causes, signs and symptoms, diagnostic and treatment methods, complications and relieving measures, preventive measures, and lifestyle modifications to enhance self-efficacy and quality of life. The booklet is illustrated with a variety of images and straightforward Arabic language.

C- Implementation phase:

Over the course of four sessions, this program was implemented. The initial session, which occurred during the assessment phase, involved the introduction of the participants, the presentation of the educational intervention's goals, and the consideration of the participants' emotions and concerns. An overview of the concept of chronic gastritis, including its types, signs, causes, risk factors, and symptoms, was provided in the second session. The diagnostic and treatment methods, as well as complications and their alleviating measures, were the primary focus of the third session. Furthermore, the fourth session addressed safety measures and lifestyle modifications. The patients were subsequently divided into small groups based on the number of hospitalized patients in the same room, ranged from (3-4) patients, after the researchers arranged the teaching sessions. The duration of each session was approximately 20 to 30 minutes. Then the patients were followed at home by telephone for adherence to lifestyle instructions.

Evaluation phase:

The educational intervention for patients with chronic gastritis was evaluated using the "Structured Knowledge Questionnaire," "Self-Efficacy for Managing Chronic Diseases 6-item Scale," and "Generic Quality of Life Inventory-74 (GQOL-74)" research tools both immediately and three months after educational intervention implementation.

Data Analysis:

The data analysis was conducted using SPSS software (version 25). The units of numerical data were the mean, standard deviation (SD), and range. Qualitative data was represented using frequency and percentage metrics. Chi-square tests were implemented to evaluate nominal variables in the two groups. When the frequency count was less than 5 for more than 20% of the cells, Fisher's exact test was employed as an alternative to the chi-square test on smaller sample sizes. The mean scores of the two groups were compared using independent t-tests. Pearson's method was employed to assess the correlation among numerical variables. The quality of life score was the dependent factor, and linear regression was implemented for multivariate analyses. A p-value of less than 0.05 was considered significant, while a p-value of less than 0.001 was considered highly significant.

Results

Table 1 shows the demographic characteristics of the studied participants where, there were non statistically significant difference among control and

intervention groups in any of these characteristics, showing that around (41.1% & 46.4%, respectively) of them were 30-< 40 years old, with close mean age of (38.53± 6.66 & 39.88± 6.69, respectively) besides, a higher preponderance of females in both groups among (80.4% & 69.6%, respectively) and (69.6%, & 80.4%, respectively) were married, moreover (48.2% & 55.4%, respectively) among the studied groups can't read and write and (53.6% & 42.9%, respectively) were working, besides their residence was in rural area among (67.9% & 73.2%) as well as (78.6% & 69.6%, respectively) reported insufficient monthly income .

Table 2 displays the medical history of the studied participants where, there were non significant statistical differences among control and intervention groups, revealing that around (37.5% & 21.4%, respectively) of them had family history of chronic gastritis , (75.0% & 64.3%, respectively) were diagnosed since < 6 months and (46.4% & 50.0%, respectively) reported that severe gastritis was the main cause of chronic gastritis and the main symptoms were burning in stomach among (35.8% & 44.6%, respectively), besides it was discovered by the occurrence of coincidental symptoms among (60.7% & 41.1%, respectively) which may be due to Smoking and eating fatty diet among (833.9% & 69.6%, respectively) and (60.7% & 53.6%, respectively) of studied groups were hospitalized due to chronic gastritis complications, moreover (8.9% & 3.6%, respectively) weren't follow up with the treating physician on regular basis.

Table 3 compares knowledge level among participants in the studied groups. As the table shows that the control and intervention groups were similar pre educational intervention with no differences of statistical significance. However, at the immediate and post three months periods, the knowledge level among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**).

Figure 1 illustrates the total knowledge level among patients in the studied groups. Displaying that the control and intervention groups had no differences of statistical significance pre educational intervention with p value (0.629 n.s). However, at the immediate and post three months periods, the total knowledge level among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**).

Table 4 compares self efficacy mean score among participants in the studied groups. Revealing that the control and intervention groups were similar pre educational intervention with no differences of statistical significance. However, during post one and three months periods, the self efficacy score among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**).

Table 5 compares quality of life mean score among participants in the studied groups. Revealing that the control and intervention groups were similar pre educational intervention with no differences of statistical significance. However, during post one and three months periods, the quality of score among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**).

Table 6 shows the correlation among the total knowledge, self efficacy and quality of life among the studied groups post three months of educational intervention , revealing that there was significant and positive correlation among total knowledge with each of self efficacy and quality of life , moreover there was also a significant and positive correlation among total quality of life and total self efficacy in both groups

Table 7. Displays multivariate linear regression model in this table reveals that quality of life score post educational

intervention among participants with chronic gastritis was best predicted among control group by presence of specific health risk behavior, occupation and total self efficacy (p= 0.001**, 0.046* and 0.048*, respectively), accounting for 76.5 % of the variance of quality of life score. As regards intervention group, it was best predicted by total self efficacy and knowledge post intervention, marital status, and monthly income (p= <0.001**, <0.001**, 0.041*, and 0.049*, respectively), accounting for 95.2 % of the variance of quality of life score.

Table 1. Distribution of both studied groups according to their demographic characteristics, control group (n=56), and intervention group (n= 56).

Patients' demographic data	Variables	Control group N=56		Intervention group N=56		X^2	P value
		No.	%	No.	%		
Age (year)	21-<30	18	32.1	15	26.8	0.649	0.884 n.s
	30-<40	23	41.1	26	46.4		
	40 - < 50	10	17.9	11	19.7		
	50-60	5	8.9	4	7.1		
	Mean ± SD	**38.53± 6.66**		**39.88± 6.69**		t= -58.081	0.675 n.s
Gender	Male	11	19.6	17	30.4	1.714	FEp 0.275 n.s
	Female	45	80.4	39	69.6		
Marital status	Single	9	16.1	6	10.7	3.122	0.209 n.s
	Married	39	69.6	45	80.4		
	Widowed	8	14.3	5	8.9		
Educational level	Can't read and write	27	48.2	31	55.4	1.466	0.690 n.s
	Read and write	5	8.9	7	12.5		
	Intermediate qualification	16	28.6	12	21.4		
	University qualification	8	14.3	6	10.7		
Occupation	Not Working	26	46.4	32	57.1	2.292	FEp 0.129 n.s
	Working	30	53.6	24	42.9		
Residence	Urban	18	32.1	15	26.8	0.387	FEp 0.679 n.s
	Rural	38	67.9	41	73.2		
Monthly income (reported by patient)	Insufficient	44	78.6	39	69.6	2.110	FEp 0.146 n.s
	Sufficient	12	21.4	17	30.4		

(n.s) Not Significant (P>0.05) FEp: p value for Fisher exact for chi square

Table 2. Distribution of both studied groups according to their medical history, control group (n=56), and intervention group (n= 56).

Medical history	Variables	Control group N=56		intervention group N=56		X^2 test	P value
		No.	%	No.	%		
Presence of family history of chronic gastritis	Yes	21	37.5	12	21.4	3.480	FEP 0.079 n.s
	No	35	62.5	44	78.6		
Time since diagnosis	< 6 months	42	75.0	36	64.3	1.582	0.453 n.s
	6 months – one year	9	16.1	12	21.4		
	More than one year	5	8.9	8	14.3		
Causes of chronic gastritis	Severe gastritis	26	46.4	28	50.0	2.646	0.266 n.s
	Helicobacter H pylori	23	41.1	16	28.6		
	Analgesics	7	12.5	12	21.4		
the symptoms that appeared #	Blood in stool	6	10.7	4	7.1	1.603	0.808 n.s
	Burning in stomach	20	35.8	25	44.6		
	Difficulty indigestion	11	19.6	11	19.6		
	Bloating and pain in the abdomen	14	25.0	16	28.6		
	Constant indigestion and constipation	16	28.6	19	33.9		
The disease was discovered by	Occurrence of coincidental symptoms	34	60.7	23	41.1	4.374	0.112 n.s
	By chance	14	25.0	22	39.3		
	Through periodic examination	8	14.3	11	19.6		
Presence of specific health risk behavior#	No health risk behavior	0	0.0	0	0.0	7.746	0.052 n.s
	Smoking and eating fatty diet	47	83.9	39	69.6		
	Eating fatty and spicy food	9	16.1	17	30.4		
	Smoking	20	35.7	22	39.3		
	Frequent use of counter medications	7	12.5	12	21.4		
Hospitalized before due to complications resulting from chronic gastritis	Yes	34	60.7	30	53.6	1.029	0.310 n.s
	No	22	39.3	26	46.4		
Follow up on a regular basis with the treating physician	Yes	5	8.9	2	3.6	2.397	FEP 0.121 n.s
	No	51	91.1	54	96.4		

(n.s) Not significant (p > 0.05) **FEp:** p value for Fisher exact for chi square **# not mutually conclusive**

Table (3): Comparison of patients' knowledge about chronic gastritis pre, immediately post and post three months of educational intervention, control group (n=56), and intervention group (n= 56).

Knowledge items	Response	Control group (n=56)						Intervention group (n=56)						X^2 test P value (1)	X^2 test P value (2)	X^2 test P value (3)
		pre educational intervention		Immediately post educational intervention		post three months of educational intervention		pre educational intervention		Immediately post educational intervention		post three months of educational intervention				
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
Concept and types of chronic gastritis	Good ≥ 75%	0	0.0	0	0.0	0	0.0	0	0.0	45	80.4	43	76.8	FE 0.143 0.850 n.s	78.756 <0.001**	75.022 <0.001**
	Fair 50-<75%	26	46.4	34	60.7	32	57.1	28	50.0	11	19.6	13	23.2			
	Poor < 50%	30	53.6	22	39.3	24	42.9	28	50.0	0	0.0	0	0.0			
Risk factors and causes of chronic gastritis	Good ≥ 75%	0	0.0	0	0.0	0	0.0	0	0.0	43	76.8	40	71.4	FE 0.527 0.629 n.s	87.040 <0.001**	83.310 <0.001**
	Fair 50-<75%	12	21.4	12	21.4	13	23.2	9	16.1	13	23.2	16	28.6			
	Poor < 50%	44	78.6	44	78.6	43	76.8	47	83.9	0	0.0	0	0.0			
Signs, symptoms and diagnostic methods of chronic gastritis	Good ≥ 75%	0	0.0	0	0.0	0	0.0	0	0.0	49	87.5	45	80.4	FE 0.340 0.698 n.s	88.780 <0.001**	79.256 <0.001**
	Fair 50-<75%	20	35.7	34	60.7	32	57.1	23	41.1	7	12.5	11	19.6			
	Poor < 50%	36	64.3	22	39.3	24	42.9	33	58.9	0	0.0	0	0.0			
Treatment methods of chronic gastritis	Good ≥ 75%	0	0.0	0	0.0	0	0.0	0	0.0	48	85.7	44	78.6	FE0.346 0.695n.s	88.258 <0.001**	73.698 <0.001**
	Fair 50-<75%	19	33.9	23	41.1	20	35.7	22	39.3	8	14.3	7	12.5			
	Poor < 50%	37	66.1	33	58.9	36	64.3	34	60.7	0	0.0	5	8.9			
Complications of chronic gastritis and its relieving measures	Good ≥ 75%	0	0.0	0	0.0	0	0.0	0	0.0	43	76.8	41	73.2	FE 2.333 0.181 n.s	75.721 <0.001**	73.429 <0.001**
	Fair 50-<75%	28	50.0	30	53.6	27	48.2	36	64.3	13	23.2	15	26.8			
	Poor < 50%	28	50.0	26	46.4	29	51.8	20	35.7	0	0.0	0	0.0			
Preventive measures and lifestyle modification	Good ≥ 75%	0	0.0	0	0.0	0	0.0	0	0.0	46	82.1	44	78.6	FE 0.572 0.571 n.s	81.091 <0.001**	77.091 <0.001**
	Fair 50-<75%	31	55.4	34	60.7	32	57.1	27	48.2	10	17.9	12	21.4			
	Poor < 50%	25	44.6	22	39.3	24	42.9	29	51.8	0	0.0	0	0.0			

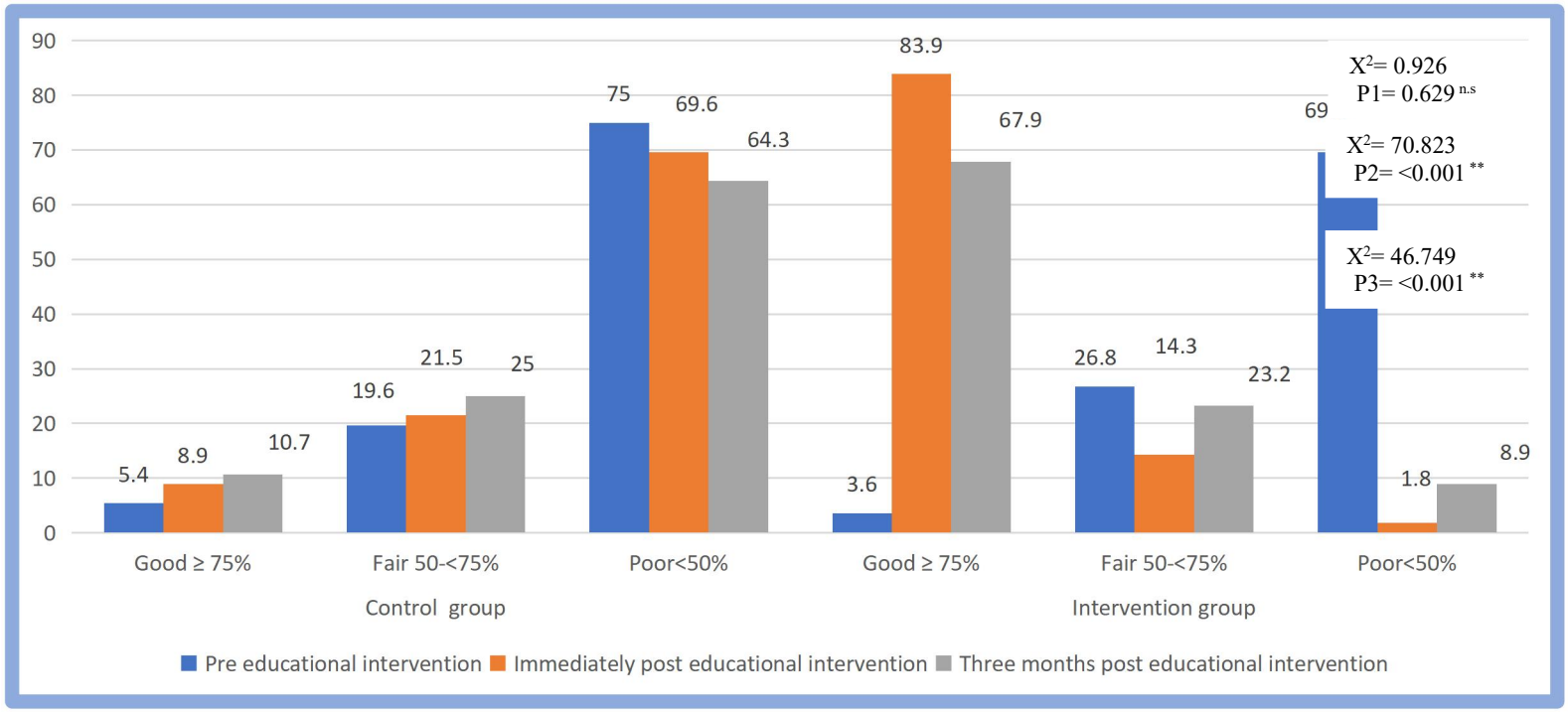
(FE) p value for Fisher exact for chi square *Not significant (p > 0.05)* *** Highly significant (p ≤ 0.001)*

(1) control group (pre educational intervention) vs intervention group (pre educational intervention)

(2) control group (immediately post educational intervention) vs intervention group (immediately post educational intervention)

(3) control group (post 3 months of educational intervention) vs intervention group (post 3 months of educational intervention)

Figure (1): Comparison of patients' total knowledge level about chronic gastritis pre, immediately post and post three months of educational intervention, control group (n=56), and intervention group (n= 56).



Not significant (p > 0.05) *** Highly significant (p ≤ 0.001)*

(1) control group (pre educational intervention) vs intervention group (pre educational intervention)
(2) control group (immediately post educational intervention) vs intervention group (immediately post educational intervention)
(3) control group (post 3 months of educational intervention) vs intervention group (post 3 months of educational intervention)

Table (4): Comparison of self efficacy mean score among patients with chronic gastritis pre, post one and three months of educational intervention, control group (n=56), and intervention group (n= 56).

Self efficacy	Control group (n=56)			Intervention group (n=56)			t- test P value (1)	t- test P value (2)	t- test P value (3)
	pre educational intervention	post one month of educational intervention	post three months of educational intervention	pre educational intervention	post one month of educational intervention	post three months of educational intervention			
	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD			
Keep the fatigue caused by disease from interfering with the things want to do	3.98± 0.61	4.07± 0.68	4.14± 0.72	3.94± 0.84	5.01± 1.38	7.37± 1.12	-0.256 0.798 n.s	4.594 <0.001**	18.121 <0.001**
Keep the physical discomfort or pain of disease from interfering with the things want to do	4.07± 0.68	4.21± 0.59	4.32± 0.63	3.91± 0.61	5.33± 1.87	6.80± 1.44	- 1.372 0.173 n.s	4.288 <0.001**	11.767 <0.001**
Keep the emotional distress caused by disease from interfering with the things want to do	3.92± 0.95	4.12± 0.87	4.21± 0.90	3.75± 0.69	5.46± 2.16	7.75± 0.99	- 1.135 0.259 n.s	4.291 <0.001**	19.629 <0.001**
keep any other symptoms or health problems you have from interfering with the things you want to do	4.03± 0.71	4.14± 0.72	4.08± 0.69	3.98± 0.88	4.92± 1.91	7.85± 0.84	-0.353 0.725 n.s	2.872 0.005*	25.855 <0.001**
Do the different tasks and activities needed to manage health condition so as to reduce need to see a doctor	4.00± 0.78	4.16± 0.73	4.10± 0.70	3.85± 0.72	5.19± 2.16	7.12± 1.94	-1.000 0.320 n.s	3.397 0.001**	10.914 <0.001**
Do things other than just taking medication to reduce how much illness affects everyday life	4.01± 0.77	4.16± 0.82	4.23± 0.85	4.00± 0.83	5.23± 2.10	8.08± 0.93	-0.118 0.907 n.s	3.544 0.001**	22.750 <0.001**
Total	24.03± 4.24	24.87± 4.12	25.10± 4.04	23.44± 3.50	31.17± 8.94	45.00± 5.31	-0.801 0.425 n.s	4.790 <0.001**	22.289 <0.001**

Not significant ($p > 0.05$) ** statistically significant ($p \leq 0.001$)* *** Highly significant ($p \leq 0.001$)*

(1) control group (pre educational intervention) vs intervention group (pre educational intervention)

(2) control group (immediately post educational intervention) vs intervention group (immediately post educational intervention)

(3) control group (post 3 months of educational intervention) vs intervention group (post 3 months of educational intervention)

Table (5): Comparison of quality of life mean scores among patients with chronic gastritis pre, post one and three months of educational intervention, control group (n=56), and intervention group (n= 56).

Quality of life Domains	Control group (n=56)			Intervention group (n=56)			t- test P value (1)	t- test P value (2)	t- test P value (3)
	pre educational intervention	post one month of educational intervention	post three months of educational intervention	pre educational intervention	post one month of educational intervention	post three months of educational intervention			
	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD	$\bar{X}$ ± SD			
Physical health	51.16± 20.93	57.50± 11.16	61.25± 14.27	55.53± 10.77	79.10± 8.42	85.53± 6.78	1.391 0.167 n.s	11.563 <0.001**	11.496 <0.001**
Mental health	49.73± 19.71	54.10± 11.24	57.67± 12.35	54.46± 9.70	77.05± 8.35	84.91± 8.06	1.612 0.110 n.s	12.257 <0.001**	13.812 <0.001**
Social function	52.94± 23.27	59.64± 15.36	60.71± 14.25	56.33± 10.24	80.26± 7.88	85.62± 6.40	0.998 0.320n.s	8.934 <0.001**	11.932 <0.001**
Material life	31.78± 8.33	33.57± 6.15	35.53± 7.84	31.07± 10.03	38.21± 7.88	42.50± 8.58	-0.410 0.683 n.s	3.472 0.001**	4.483 <0.001**
Total	185.62± 65.56	204.82± 30.39	215.17± 29.96	197.41± 23.13	274.64± 16.72	298.57±19.18	1.268 0.207n.s	15.061 <0.001**	17.539 <0.001**

Not significant (p > 0.05) *** Highly significant (p ≤ 0.001)*

(1) control group (pre educational intervention) vs intervention group (pre educational intervention)

(2) control group (post 1 month of educational intervention) vs intervention group (post 1 month of educational intervention)

(3) control group (post 3 months of educational intervention) vs intervention group (post 3 months of educational intervention)

Table (6): Correlation coefficient between patient's total knowledge, self efficacy and quality of life post three months of educational intervention, control group (n=56), and intervention group (n= 56).

Variables		Total knowledge		Total quality of life	
		r	P value	r	P value
Control group	Total self efficacy	0.220	0.022*	0.295	0.011*
Intervention group		0.906	<0.001**	.720	<0.001**
Control group	Total quality of life	0.312	0.007*	-	-
Intervention group		0.304	0.011*	-	-

*** Statistically significant p ≤ 0.**05 **** Highly Statistically significant p ≤ 0.**001

Table (7): Multiple linear regression analysis for predictor variables of quality of life among patients with chronic gastritis post three months of educational intervention, control group (n=56), and intervention group (n= 56).

Predictor Variable of quality of life	Control group (n=56)					Intervention group (n=56)				
	Standardized Coefficients	Unstandardized Coefficients				Standardized Coefficients	Unstandardized Coefficients			
	Beta	B	Std. Error	t	Sig.	Beta	B	Std. Error	t	Sig.
(Constant)	34.663	13.476		2.572	.017	-26.539	4.282		-6.198	<0.001**
age	1.283	1.870	.138	.686	.499	2.293	1.426	.072	1.608	.114
Marital status	.100	.729	.019	.138	.892	1.797	.857	.080	2.097	**.041***
Occupation	3.290	1.560	.318	2.108	**.046***	.748	1.522	.020	.492	.625
Monthly income	-	-	-	-	-	4.546	2.250	.141	2.021	**.049***
Time since diagnosis	-	-	-	-	-	.732	1.820	.011	.402	0.689
Presence of specific health risk behavior	-7.249	2.007	-1.342	-3.611	**.001****	-	-	-	-	-
Follow up on regular basis	-.908	.926	-.351	-.980	.337	-	-	-	-	-
Total knowledge post educational intervention	-.049	.353	-.017	-.139	.890	2.811	.421	.352	6.683	**<.001****
Total self efficacy post educational intervention	-1.329	.638	-.692	-2.083	**.048***	2.104	.182	.968	11.574	**<.001****
Adjusted R^2= 0.765 P = <0.001**						**Adjusted R^2= 0.952 P = <0.001****				

(**B**) Beta Co-Efficient (SEB) Standard Error *** Statistically significant p ≤ 0.**05 **** Highly Statistically significant p ≤ 0.**001

Discussion

The purpose of this investigation was to assess the influence of educational interventions on the self-efficacy and quality of life of patients with chronic gastritis. The results of the current research demonstrated that the studied subjects were homogeneous, as there were non statistically significant differences in characteristics among the control and intervention groups, regarding being of higher age group this may be due to age-related changes that decrease gastric mucosa of the stomach, causes irritation in wall of the stomach, besides being female due to psychological stressors, also being married as, married individuals hold wide responsibilities and tasks which increase their stress, moreover can't read and write and working, pointing out that the association with harmful habits as smoking, fatty and spicy food besides occupational workload, that increase risk of chronic gastritis . This is in agreement with the results of **(Xiao et al., 2021)**, who determined that there were non statistically significant differences among the control and intervention groups in terms of educational level, sex, and age.

The present research demonstrated that there was non statistically significant difference among the control and intervention groups in terms of their medical histories, revealing that around one third of them had family history of chronic gastritis, around half of studied patients reported that severe gastritis was the main cause of chronic gastritis, and the main symptoms were burning in stomach among nearly two fifths. Revealing that increased acid secretion, causes irritation in the stomach presented by burning sensation. This finding was congruent with **(Feyisa, and Woldeamanuel, 2021)** who found that 48.1% of patients who had chronic gastritis suffered from heartburn symptoms. The research findings revealed that chronic gastritis was discovered by the occurrence of coincidental symptoms among nearly (three fifths of control group & two fifths of intervention group) which may be due to smoking and eating fatty diet among (the majority of control group & more than two thirds among intervention group). The findings were corroborated by **(Zhao et al., 2023)**, who asserted that individual lifestyle and dietary modifications are practical strategies for preventing and treating gastritis.

Concerning knowledge level among patients in the studied groups. the current research revealed that the control and intervention groups were similar to pre-educational intervention with no differences of statistical significance. However, at the immediate and post three months periods, the knowledge level among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**). Assuring the effectiveness of intervention, in term of content clarity and simplicity. This result supported **H1 that entitled "knowledge score among intervention group may be significantly higher than control group post educational intervention"**

This finding was in the same line with **Yang and Zhang (2018),** who concluded in their study that the sample had considerably higher knowledge regarding chronic gastritis compared to the control sample (P<0.05). As well, **Yang et al., (2018),** reported that health education improved the case group's knowledge regarding related diseases (P value < 0.05). Also, **Borude et al., (2022),** found that the mean knowledge score after health education was 11.86, much higher than before score of 6.75. **Fandini and Fadilah (2022),** found that patients' awareness of gastritis improved from 5.40 to 7.97 after receiving health education.

In the current research, the self-efficacy mean score among patients in the studied groups. Revealing that the control and intervention groups were similar pre-educational intervention with no differences of statistical significance. However, during post one- and three-months periods, the self-efficacy score among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**) pointing out the effectiveness of gained knowledge in increasing ability to engage in healthy lifestyle for managing disease. Which

supported **H2 that entitled "Self efficacy score among intervention group may be significantly improved than control group post educational intervention"**

This finding was congruent with **Yin-fang and Jian-hua (2020),** who revealed that after three months of intervention, the trail group had higher self-efficacy scores (43.51±3.42) than the control group (37.42±3.40), t=9.786, P<0.05. Also, **Xiao et al., (2021),** stated that following the intervention, the trail group's general self-efficacy scale (GSES) score was greater than the control group (P < 0.05). In a recent study, **Palmeirima et al., (2024),** the implementation of the chronic disease self-management program in the Republic of Moldova has shown a short-term improvement in chronic patients' self-efficacy to deal with the everyday impact of their diseases, where at follow-up, self-efficacy was considerably greater (8.3, SD = 1.1) than at baseline (5.3, SD = 1.7), t(58) = −12.2, p < 0.001).

Regarding quality-of-life mean score among patients in the studied groups. Revealing that the control and intervention groups were similar pre-educational intervention with no differences of statistical significance. However, during post one- and three-months periods, the quality of score among both groups shows a statistically significant differences among them in term on significant improvement among intervention group (P=<0.001**), revealing that improved ability to manage disease as a result of acquired knowledge has a better effect on improving quality of life. Which supported **H3 that entitled "Quality of life score among intervention group may be significantly improved than control group post educational intervention"**

This finding was supported by **Anonymous (2021)**, reported that the optimization group had a higher quality of life compared to the reference group (P < 0.05), and concluded that comprehensive nursing interventions have significantly improved the quality of life for individuals with chronic gastritis. Also, **Namvar et al., (2022)** who found that the intervention group had greater Quality of Life scores than the control group.

There was a significant and positive correlation among total knowledge and each of self-efficacy and quality of life. Additionally, there was a significant and positive correlation among total quality of life and total self-efficacy in both groups this may be due to the acquired knowledge regarding lifestyle modification encouraged patient to engage in healthy lifestyle pattern and continue due to its obvious effects. The findings were in accordance with **Paudel's (2019)** assertion that the instructional program can improve the quality of life, reduce ambulatory needs, and enhance patients' comprehension. Additionally, **Xiao et al. (2021)** discovered that a standardized nursing program in conjunction with mindfulness stress reduction education has a positive therapeutic effect on patients with chronic gastritis. This combination is beneficial for the improvement of quality of life and the development of self-efficacy. Quality of life score post educational intervention among patients with chronic gastritis was best predicted among intervention group by marital status, and monthly income (p= 0.041*, and 0.049*, respectively), accounting for 95.2 % of the variance of quality of life score. This finding was in the same line with **Wen et al., (2014),** who found that patients with poorer income reported lower quality of life.

Conclusion: Implementing the educational intervention had a positive and better effect on patients with chronic gastritis evidenced by increased knowledge score, and improved self efficacy and quality of life mean scores among intervention groups than in control group.

Recommendations: On the basis of the findings of the investigation, the subsequent suggestions are proposed:

1. Enhance health education program regarding self-care for patients with chronic and dietary education
2.Complying with Follow up visits to the clinic in order to assess the patient's progress in health status and detect any incidence of complications.
3. Incorporate safety measures and lifestyle modifications into the patient's management plan and engage the patient and their family in the development of this plan of care.
4. The results of the current research will be generalized by conducting a replication on a large, representative sample.

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