

Effect of Health Educational Program About Constipation On Elderly Quality of Life

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Abstract

Background: Constipation is a common intestinal complaint among elderly and has a significant effect on their quality of life (QOL). **Aim:** This study aimed to assess the effect of health educational program about constipation on elderly QOL. **Design:** A quasi-experimental design was used with a pre-post evaluation in carrying out the study. **Setting:** the study carried out at Geriatric Social Club at Ismailia city and chronic diseases clinic in Suez Canal University Hospitals. **Sample:** A convenience sample of elderly people (male and females) who are self-independent. **Tools of data collection:** three tools used, tool I: Structured interview consisted of demographic data and self-care management of constipations. Tool II: World Health Organization Quality of Life Questionnaire- Brief (WHOQOL-BREF), Both tools were used for evaluation, pre and post intervention. Tool III: Educational program on constipation. **Results:** Pre-test reveals that a very low percentage of the elderly had a higher QOL in all areas of QOL compared to the same elderly on post-test. Also, at post-intervention phase, most of the studied elderly moved to the appropriate methods to overcome constipation related problems such as follows a planned diet, increasing fluid intake and (walking). While almost all of them prevented the use of lots of laxative and enemas. Also, it indicates that, the differences between pre and post the intervention program tests were of highly statistical significance ($p < 0.001$). There was significant improvement of elderly QOL. **Conclusion:** The health education program implemented on constipation had a significant impact on elderly's QOL and their practices regarding the constipation problem. **Recommendation:** Repetition similar studies with different places, ethnic backgrounds and population to generalize results and effects.

Key words: Elderly; Constipation; quality of life.

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I. Introduction

Constipation is a common gastrointestinal complaint and challenge among elderly people^{1,2}. Chronic constipation is described as defecation less than three times per week with tough lumpy stool and difficult stool passage (incomplete evacuation and or need Strain) for more than 6 months. It affects 33.5% of the elderly aged 60 – 101 years^{3,4}.

Causes of constipation among the elderly are linked to several factors, including slow or lack of normal bowel movements due to immobility, sedentary lifestyle, low fiber dietary intake, insufficient fluid intake, ignoring the urge to defecate, lack of regular exercise, stress and overuse of laxatives^{5,6,7}.

The constipated elderly may experience unpleasant symptoms such as distention, abdominal pain/discomfort, straining, lumpy, hard stools, feeling of incomplete and infrequent evacuation of defecation (less than three excrement per week)^{7,8,9}. These symptoms have worked impact on the elderly's quality of life. Some studies have found that people with constipation usually have a poor quality of life^{4,10}.

Constipation management and care depend on preventing constipation formation and providing comfort when constipation occurs by support functions and reducing the severity of symptoms^{1,11,12}. This is achieved through planned health education which aims to the elderly with suitable information and alternative to prevent and avoid factors causing constipation, and the appropriate ways to deal with them, and thus improving the quality of life^{7,8,13}.

The education which provided related to constipation contains lifestyle modifications (such as, healthy nutrition, daily fluid intake, regular physical activity, good toilet habits and regular health monitoring), mitigating risk factors and providing a controlled laxative treatment^{14,15}.

Nurses and health care providers play an important role in preventing and managing constipation by giving lifestyle advice for people/elderly with constipation, information on eating rich fiber, adequate drinking fluids, and exercising regularly. Education provided by nurses or other health team, must provide individuals with the necessary tools to reduce the severity of constipation and increase the quality of their lives⁷.

Study aim:

This study aimed to assess the effect of health educational program about constipation on elderly quality of life.

Research Hypothesis

The health education program about constipation will improve the QOL of elderly people who have chronic constipation.

II. Subjects And Methods

Study Design:

A quasi-experimental design was used with a pre-post evaluation through carrying out the study.

Study setting:

The study carried out at Geriatric Social Club at Ismailia city and chronic diseases clinic in Suez Canal University Hospitals

Target population

A convenience sample of elderly people (male and females) according to the following criteria:

- **Inclusion criteria:**
- 60 years and above
- Self-independent elderly
- Elderly diagnosed with chronic constipation at least 6 months
- **Exclusion criteria:**
- Mental confusion or other psychiatric problems
- Abdominal surgeries
- Constipation due to metabolic disorders, organic diseases and drugs

Sample size:

The following equation was used to estimate the sample size:

$$n = \frac{N^x}{(N^x - 1) E^2 + X}$$

Where:

n = sample size

E = margin of error can accept = 10 %

X = confidence level = 95%

$N^x = N (P/100) = 12708$ elder

P = Prevalence of constipation among elder = 33.5% (Mugie et al., 2011)³

N = Total population (elder Ismailia) = 37933 (Egyptian population survey, 2107)¹⁶.

****Sample Size (n)** = 57 older people 60 years and more were included in the study. The researcher added 3 elders to the sample size to facilitate the statistical analysis.

Tools of data collection:

Three tools were used to collect the necessary data:

Tool 1

An interview questionnaire was developed by the researchers based on a literature review. It consists of two parts:

First part:

- Socio- demographic data of the studied elderly (gender, age, education, marital status, occupation, type of family and residence):
- Medical & Surgical history and Smoking habits

Second part:

- Self-care management of constipations, practice of exercise, dietary habits, fluid intake and using enemas.

Tool 2

World Health Organization Quality of Life Questionnaire- Brief (WHOQOL- Brief)¹⁷: This questionnaire is a self-assessment scale, consisted of 26 items: (2 items) asking about elder's satisfaction about his quality of life and general health, (7, 6 and 8) items for domains of physical, psychological health and environmental

health respectively and 3 items for social relationships domain. It was adopted by **Abdel Hai et al.**¹⁸ whoever has translated into Arabic and written consent for use it. The whole group of questions has been related to the past two weeks.

The study tools were used two times pre and post program to assess the effect of health educational program about constipation on elderly quality of life.

Tool 3

Educational program on constipation

It was developed by the researcher to provide the studied elderly with essential information about constipation and different way to prevent, control symptoms, and self-care management, as diet, practicing exercises, daily walking, increase fluid intake, and prevent a lot of laxatives.

Scoring system:

For Self-care managements items. Score 1 was given to yes response and zero for no. For every part, the scores of the items were summed up and the total divided by the number of the items, giving a mean score for this part. Then the scores were converted into a percent score.

For WHOQOL-BREF, questionnaire uses a Likert scale from five points starting from never (1) to always (5). Domain scores were scaled in a positive direction. For each domain, the mean score was calculated by dividing the sum of item scores by their number. These scores were transformed to a percent score. Higher scores signify higher in quality of life. The elder's quality of life was considered low if percent scores were <60%, moderate if percent scores were ≥ 60 , and relatively **high** if percent scores were ≥ 80 %. The Cronbach alpha coefficient for WHOQOL-BREF was 0.788.

Pilot study

The pilot study was conducted on 10% of the elderly sample to test the clarity, reliability and suitability of the tools. The sample of the pilot study was excluded from the study sample.

Ethical consideration

Oral consent was obtained from every elderly before the start of the educational intervention after explanation of the purpose and benefits of the study. They were reassured that all gathered data collected would be clandestine and used only for research purposes. The researcher informed them that, they are entitled to leave the study at any time.

Field work

- Data were collected: once before starting the health education program (pre -test) and the second time two weeks after the program (post test)
- The data collection forms were applied using the interview with the elderly and all his/her answers were recorded nearby them. It took about 15-20 minutes to collect the data
- After completing the questionnaires, the educational **program** on constipation was given by the researcher.
- After the sessions were completed, a Constipation Education Booklet was given to every elder in the study.

Education program

- Constipation Education Booklet was prepared by the researchers based on available research, literature review and the assessment of the actual educational needs of the elderly who were studied. It was written in simple Arabic and covered information related to self-care management of constipation
- The program contents were organized by choosing the appropriate teaching methods and media.
- The educational program on constipation was carried out in a room located in the outpatient clinics at the university hospital and geriatric club.
- The program took approximately 60–90 minutes to carry out the education. It was divided into 3 sessions, lasting 20- 30 minutes for each.
- The education was taught individually and interactively to each elderly, using a visual representation.
- The "Constipation Education Booklet" was used during educational sessions to strength the education.
- The education booklet consisted of two parts. First part; contained the definition, risk factors, complications of constipation, some recommendations for preventing constipation, treating constipation, and the importance of self-care in constipation.
- Second part; contained information on a healthy, balanced diet and types of nutrition, sufficient of fluid intake, abdominal massage, exercise benefits, selection of appropriate exercise, and toilet training.

- All questions posed by the studied elderly were answered by the researcher.
- The same tools used in pre-test were used in post-test to evaluate the effectiveness of the educational program in improving quality of life among studied elderly. **The study took period time about 6 months from (March to August 2019)**

Data analysis

Data analysis was done using the SPSS version 20.0. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and means and standard deviations for quantitative variables. The Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. Qualitative variables were compared using chi-square test, Pearson coefficient and Spearman's rank correlation coefficient (r) were used for assessment of the interrelation among quantitative variables and ranked ones. Statistical significance was considered at p-value <0.05

III. Results

Table 1: revealed that, the age of studied elderly ranged from 60 to 90 years with mean age of 65.9 ± 6.8 years, more than half (56.7%) were male, 40% Read and write, 48.3% were married, 46.7% were Retire/ non-working, three fourth (73.3%) were living in extended families and 53.3% live in rural areas.

Table 2: illustrates that two third of the study sample (65. %) had hypertension, while (31.7 %) of them suffered from diabetes mellitus, gastrointestinal symptoms represented in (10%) of them

Table 3: shows that, 70% of study, elderly reported that they took medication (laxatives) to overcome their constipation, while the less common methods include exercising (walking) and using an enema problem in the pretest.

At post-test, most of the studied elderly switched to appropriate methods such as follows a planned diet, increasing fluid intake and exercise (walking) to overcome constipation and its problems, while almost all of studied elder prevented using a lot of laxatives, and enema. All of these changes are statistically significant (p<0.001)

Table (4): reveals that; in the pre-test, the very low percentage of elderly had higher quality of life in all areas of quality of life compared to the same post-test elderly. It also shows that, there were differences between pre and post-intervention and this difference was statistically significant (p<0.001).

Table (5): represents that; were differences between studied elderly self-care management and their QOL were statistically significant

Table (6): displays that, there were statistically significant relationships between elderly QOL and their education and residence in post test

IV. Discussion

Constipation is a common bowel symptom that is frequently reported in the elderly and has a major impact on quality of life and overall health¹⁹. This study was conducted to assess the effect of educational program about constipation on elderly quality of life.

The present study revealed that, almost half of studied elderly were in the retirement and this phase is accompanied with poor health outcome, presence of chronic diseases and lack of activity. While two third and 31.7% of studied elderly had hypertension and diabetes mellitus respectively, this could be explained by the fact that elderly people with diabetes and hypertension who adherent to medications e.g. Anticholinergic drugs - opiates- Calcium-channel blockers - antipsychotics can have chronic constipation. Also, smooth muscle dysfunction, autonomic neuropathy and Neuro-endocrine disorders may also lead to the development of chronic constipation. Anorectal dysfunction, either due to sensory or motor distortions, should be considered, in client with diabetes mellitus^{5,18,20}

The study revealed that 70% of studied elderly were used laxatives before educational program which decreased to 40% after implementing an educational program this was agreed with **De Giorgio et al.**¹⁹ who mentioned that 85 % of patients with constipation who need medical management are already using laxatives, in the United States about 82 million dollars are spent on over-the-counter laxatives every year^{21,22}.

In addition, there are many different types of laxative available, which ranging from syrups, tablets, powders, fruit pastes to local lotions that are inserted directly into the back passage (enema or suppository). The three main types of laxatives (Cathartics); are bulk producing agents, irritants, lubricants, saline cathartics and osmotic factors. While **Chernich**²³ mentions that the study contained 60 individuals used other therapies: as massage, reflexology and aromatherapy to improve constipation symptoms and abdominal pain. The study also shows that there was statistically significant improvement regarding all aspects of constipation, self-care management, pre and post educational program. This finding was in accordance with **Nour-Eldein et al.**¹² and **Oztrur and**

Kikic⁷ who stated that education on lifestyle modifications lead to an improvement in the severity of symptoms of constipation and quality of life for the elderly. Therefore, teaching the importance of a healthy and balanced diet, adequate fluid intake, regular bowel habits, the best position to defecate, the benefit of exercise, choosing the right exercise and indicators of laxatives are highly important.

In the pre-test, very low percentage of studied elderly had higher quality of life in all areas of quality of life, that was similar to **(Ruiz-Leopez and Adame, (2015))**²⁴ in his study Quality of life in patients with different sub-types of constipation based on the Rome III criteria. Who proved that functional constipation and irritable bowel syndrome with constipation are very prevalent and affect the quality of life of those who suffer from them; both the social and working life of patients who affected.

Hinkle and Cheever²⁵; **De Giorgio et al.**¹⁹; **Jiang et al.**²⁶ in their study, when responding to a questionnaire, the study sample had 8 areas about health status, including general health, vitality, social performance, emotional role (limitation of daily activities causing emotional problems) and mental health. The highest score was associated with normal and healthy status. Compared to those with slow transit constipation or restless bowel movements, those with greater psychological stress, and poor health-related quality of life. Also showed a higher prevalence of hostility, paranoid ideation, and obsessive-compulsive disorder. Moreover, anxiety disorders, depression, sleep disorders as well as somatization.

While **Belsey et al.**¹⁰ reported in his study that poor quality of life for elderly suffer from constipation is close together more serious conditions as chronic allergies, osteoarthritis, rheumatoid arthritis, and diabetes. Moreover, it was noted that the improvement in quality of life and mood improvement with effective treatment of constipation.

V. Conclusions

Based on the results of this study it can conclude that, the health educational program given to the elderly improves their practices with regard to self-care management about constipation and improve their QOL

VI. Recommendations

- 1- Education about side effect laxatives, must be directed to the elderly who exaggerates in use it.
- 2- Lifestyle modification is an issue of a global concern and is recommended to prevent and manage chronic constipation among the elderly
- 3- Giving much concern to prevent the risk factors of chronic constipation in the elder population, especially those with chronic disease as diabetes mellitus and high blood pressure.
- 4- Repetition similar studied with different places, ethnic backgrounds and population to generalize results and effects.

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Tables:

Table (1): Distribution of the studied elderly according to socio-demographic characteristics (n=60).

Characteristics	No	%
Age in Years		
60-	33	55.0
65-	16	26.6
70-	3	5
75-	4	6.7
80-90	4	6.7
Mean ±SD	65.9 ±6.8	
Gender:		
Male	34	56.7
Female	26	43.3
Education		
Illiterate	19	31.7
(Read and write + Basic)	24	40
Secondary	10	11.7
University	7	16.7
Marital Status		
Single	1	1.7
Married	29	48.3
Divorced	4	6.7
Widow	26	43.3
Occupation		
- Retire/ non-working	28	46.7
- Free work	13	21.7
- Technician	8	13.3
- Employee/ worker	11	18.3
Type of family		
Nuclear	16	26.7
Extended	44	73.3
Residence		
Rural	32	53.3
Urban	28	46.7

Table (2): Distribution of the studied elderly according to their medical & surgical history (n=60).

	No	%
- Medical & Surgical History*		
None	16	26.7
Hypertension	39	65.0
Diabetes mellitus	19	31.7
Urinary diseases	7	11.6
Anemia / headache	7	11.6
Gastrointestinalsymptoms **	6	10.0
Heart diseases	3	5.0

Others***	7	11.7
Smoking		
Yes	19	31.7
No	41	68.3

N.B.

* More than one answer.

** GIT (heartburn, distention, peptic ulcer and dyspepsia, liver disease).

***Others= (anal- fisher, Vaginal polyp and vaginal ulcer).

Table (3): Distribution of the studied elderly according self-managements to overcome their constipation pre and post-test (n=60).

self-managements to overcome the constipation problem?		pre		Post		X ²
		No.	%	No.	%	
1-	Do physical activity (sport / walking)					48.758 (0.000)**
	None					
	Regular	33	55.0	26	43.3	
	Irregular	8	13.3	15	25.0	
		19	31.0	19	31.7	
2-	Take medication (laxatives)	42	70	24	40	17.143 (0.000)**
3-	Increase fluid intake	17	28.3	46	76.7	7.826 (0.000)**
4-	Follow a planned diet	14	23.3	35	58.3	13.043 (0.001)**
5-	Use enema	4	6.7	2	3.3	28.966 (0.003)**

(*) Significant $P < 0.05$

Table (4): Distribution of the studied elderly according their quality of life domain in pre and post- tests .

Quality of life domains	pre		Post		r test / P
	No.	%	No.	%	
Physical health domain					0.404 (.001) **
Low QOL	47	78.3	10	16.7	
Moderate QOL	13	21.7	48	80.0	
High QOL	0	0.00	2	3.3	
Mean ± SD	19.25 ± 2.89		23.5 ± 2.64		
Psychological health domain					0.724 (.000) **
Low QOL	44	73.3	9	15.0	
Moderate QOL	16	26.7	51	85.0	
High QOL	0	0.00	0	0.00	
Mean ±SD	17.75 ± 3.03		20.23 ± 2.15		
Social relationships domain					0.856 (.000) **
Low QOL	22	36.7	11	18.3	
Moderate QOL	22	36.7	21	35.0	
High QOL	16	26.6	28	46.7	
Mean ±SD	10.20 ± 5.86		10.38 ± 1.92		

Environmental domain	29	48.3	17	28.3	0.816 (.000) **
Low QOL	31	51.7	42	70.0	
Moderate QOL	0	0.00	1	1.7	
Mean ±SD	23.81± 2.15		25.85 ± 3.62		
Total QOL	35	58.3	10	16.7	0.646 (.000) **
Low QOL	24	40.1	49	81.7	
Moderate QOL	1	1.7	1	1.7	
Mean ±SD	70.78±10.58		80.33 ± 9.68		

r: Pearson coefficient

(*) Significant P < 0.05

N.B: score < 60, low QOL; score ≥ 60, moderate QOL; and score ≥ 80, relatively high QOL.

Table (5): The relationship between studied elderly self-care management and their total QOL scores in pre and post-test (n=60).

Self-managements of constipation		QOL				X ² (p-value)
		Pre		Post		
		No	%	N	%	
Physical activity	Regular	8	13.3	15	25.5	60.226 (0.000)*
	irregular	19	31.7	19	31.7	
	None	33	55.0	26	43.3	
	X ² (p-value)	1.246 (0.536)		1.091 (0.579)		
Take medication (laxatives)	Yes	42	70.0	24	40.0	130.197 (0.000)*
	No	18	30.0	36	60.0	
	X ² (p-value)	1.206 (0.272)		3.569 (0.059)		
Increase fluid intake	Yes	18	30.0	46	76.6	137.06 (0.000)*
	No	42	70.0	14	23.4	
	X ² (p-value)	0.126 (0.722)		0.554 (0.457)		
Planed diet	Yes	14	23.4	35	58.3	144.013 (0.000)*
	No	46	76.6	25	41.7	
	X ² (p-value)	0.386 (0.534)		0.77 (0.782)		
Use enema	Yes	4	6.7	2	3.3	168.638 (0.000)*
	No	56	93.3	58	96.7	
	X ² (p-value)	0.160 (689)		0.096 (0.757)		

X² Chi- Square (Kruskal-Wallis Teat)

(*) Significant P < 0.05

Table (6): Coloration between the studied elder quality of life domain their socio-demographic data, smoking habits and medical and surgical history pre and post-test (n=60).

Items	QOL	
	Pre	Post
Age	-0.092 (0.486)	-0.206 (0.336)
Sex	-0.170 (.194)	-0.126 (0.336)
Residence	0.135 (0.303)	0.340 (0.008)*
Education	0.229 (0.078)	0.357 (0.005)*
Family type	0.028 (0.830)	0.085 (0.528)
Occupation	-.047 (0.727)	0.045 (0.734)
Marital status	-0.145 (0.269)	0.058 (0.660)
Smoker	0.100 (0.445)	0.115 (0.382)
Medical and surgical history	-0.125 (0.343/0)	-0.245 (0.059)

** Correlation is significant at the 0.01 level .

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