

Effect of Nursing Intervention on Severity of Constipation among Elderly People at Sohag Geriatric Club, Egypt

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Abstract

Background: Constipation is a common digestive problem in elderly people. **Study Aim:** The aim of this study was to assess the effect of nursing intervention on the severity of constipation among elderly people at Sohag geriatric club. **Design:** A quasi-experimental research design was utilized. **Setting:** The study was conducted at Sohag geriatric club. **Subjects:** The study sample consisted of elderly participants were 244 (male & female) was selected by convenient sample; the nursing intervention was applied on all elders who had constipation (84) after assessment phase. **Tools** of data collection: two proper tools were used, tool (I): consisted of two parts A) socio-demographic characteristics of older adults e.g. age, sex, education level, part (2): medical and nutritional history. Tool (II): Constipation assessment scale to measure constipation severity. **Results:** about one third (34.4%) of elderly were having constipation, also the study revealed that, there was highly statistical significant improvement in severity of constipation before and after application the nursing intervention. **Conclusion:** The study concluded that nursing intervention effective to decrease severity of constipation among elderly with constipation. **Recommendation** Application of nursing intervention to manage and decrease the severity of constipation among elderly people and importance of implementing periodic health education program for gerontological nurses, other health care providers and caregivers about management and prevention of constipation among elderly people.

Keywords: Elderly, Constipation, Nursing Intervention.

Introduction:

Elderly are extra often affected by constipation than younger persons. It's miles stated that the superiority of constipation increases with age, mainly human beings older than 60 years and its prevalence may be as high as 20% of community-dwelling elderly people and 74% of nursing home residents. This is because of a distinct of things, because of numerous greater factors which include age associated issue polypharmacy, presence of

comorbidities, reduced mobility, reduced hydration, and inactive lifestyles (Zheng and Yao, 2018, Larkin et al., 2018 & Wahab et al., 2020).

The most common complaint among elderly with constipation is of a recent or persistent change in bowel habit. However, the majority of them don't search for immediate medical advice. This may be due to embarrassment; self prescribed medication or misconceptions about what is considered normal. For instance, commonly attribute the lack of bowel movements to

reduced food intake when faces are predominantly made of water (75%) and bacterial biomass. Constipation is associated with rectal pain and discomfort, affects overall well-being and can have a negative impact on quality of life (6). It can lead to consequences such as urinary retention, fecal incontinence, rectal prolapse, hemorrhoids, anal fissure and cardiovascular changes (**McRorie and McKeown, 2017 & Lundberg et al., 2020**)

Nursing intervention is instruments that contain systematically structured recommendations, based on scientific evidence, technological and economic evaluation of health services, and their quality assurance. One of its purposes is to guide the decisions of health professionals regarding appropriate care in situations of disease prevention, health recovery or rehabilitation. The use of interventions in the nursing field presents positive results, such as reducing the variability of healthcare actions, improving the qualification of professionals in healthcare decision-making, facilitating the incorporation of new technologies, innovating care, among others (**Figueiredo et.al, 2018**)

Nurses are frequently vital to the identification and effective management of constipation. They ought to guarantee that their insight and skills are maintained to enable them to implement care that is powerful and evidence based. They assess elderly patients' symptoms, help elderly patients with defecation by ensuring that they get into a good functional position when sitting on a toilet, with the knees above the hips and the feet elevated. Nurses also recommend them to increase dietary fiber, fluid intake, and increase mobility to help in relieve of constipation (**Woodward, 2012**).

Nurses may play a vital role in organizing and delivering educational sessions that help in the prevention of constipation and enhance the quality of life for the clients by using structured, systematic planning process, and ongoing support for implementation. A core education session must take into account local circumstances and should be disseminated through an active educational and training program. These must be monitored to evaluate their impact on the prevention of constipation (**Abd Allah et al., 2013**).

Significant of the study:

Constipation is a common and significant health problem in the elderly. More than one-seventh of the adult population in the world suffers from constipation. It constitutes 1% of the annual referral of patients to physicians, resulting in the imposition of high costs on the health system. The incidence of constipation in women is 2 to 3 times that of men, the prevalence of this disorder in the elderly at the age of 60 years and older is 33.5% and Chronic constipation impacts 17–40% of them (**Mansouri et al., 2018 and Farahata et al., 2019**).

Constipation is related to multiple factors, and when it is untreated or not properly treated, results in complications, such as impaction or perforation and death. Constipation represents financial weight for the patient and healthcare provider. Management and prevention are the best interventions to improve the patients with symptoms of constipation (**Nour-Eldein et al., 2014 and Madick, 2016**). Therefore, this study aimed to determine the effect of nursing intervention on the severity of constipation among elderly people.

Research aim:

The aim of this study was to assess the effect of nursing intervention on the severity of constipation among elderly people at Sohag geriatric club.

Research hypothesis:

- The nursing intervention effective to decrease the severity of constipation among elderly people at Sohag geriatric club.

Subject and Methods

- **Research Design:** A quasi-experimental research design was applied in this study.

- **Setting:**

The study was conducted at Sohag geriatric club with different activities are practiced under the supervision of the organizing committees and the Ministry of Social Affairs. Geriatric club provides social, recreational & health care services for elderly participants.

Sample:

Convenient sample consisted of 244 elderly fulfilled these criteria in the setting, to screen severity of constipation, inclusion criteria of being 60 year old or more and fulfilling constipation assessment scale, excluded were those with the following; taking laxative or enema for constipation, colorectal cancer, chronic renal failure, depression, dementia, or acute confusion and ostomy.

Constipation was diagnosed in 84 elders based on constipation assessment scale (McMillan and Williams, 1989) and was applied nursing intervention on them.

Tools of data collection:

Two proper tools were included in this study after reviewing the relevant literature to elicit information;

I. Structured interview

questionnaire: It was designed by the researchers based on review of the related literatures. It was involved two parts:

Part 1:- Socio-demographic characteristics such as age, gender, marital status, education, occupation, residence.

Part 2:- Medical and nutritional history included questions about the client's general health problems experienced during the last year, chronic diseases, past and present medical histories, and elderly nutrition habits as drinking tea, taking dairy products, taking fibers.

II. Constipation Assessment Scale:

It is a screening tool used by most of health care providers either professional nurse or caregivers to assess the severity and existence of constipation (McMillan and Williams, 1989). translated into Arabic, standardized and tested for content validity and reliability to Egyptian culture by **Mohamed et al., (2015)**. This tool to evaluate the severity of constipation and includes 8 characteristics that are frequency of bowel movements, abdominal distension and flatulence, changes in the quantity of fuel excretion from the anus, fluid intake from the surrounding stool, feeling of fairness and pelvic pressure, anal pain during bowel movements, low quantity of feces, and failure in disposal inside the last 24 hours. The score for this instrument was calculated based on the Likert scale from 0 to 2, and the final score was calculated from the total of the 8 characteristics referred to above and from 16 scores. According to the recorded score, the severity of the constipation was assessed as

mild, average, intense, and very intense constipation by the score of (0-4), (5-8), (9-12), and, (13- 16) respectively.

Validity and reliability of the tools:

The questionnaire content validity was determined by a panel of five (5) experts in the related field. The necessary modifications were done according to the experts' valuable comments. Reliability was assessed by applying the questionnaire on ten clients using test-retest. Constipation assessment scale demonstrated good reliability by **Mohamed et al., (2015)** Cronbach's alpha test (r) = 0.88.

Method:

Administrative approval: An official letter was issued from the Faculty of Nursing, Sohag University and forwarded to the director of Sohag geriatric club to obtain the permission to attend the mentioned setting. Then, the study purpose and schedule of data were clarified.

Pilot study: A pilot study was carried out on 20 total studied elderly; they were not included in the study participants. It was done in order to assess the clarity and applicability of the questionnaire, to test wording of the questions and to verify the required time needed for the interview. Also, to detect any obstacles or problems that might arise in data collection.

Ethical consideration:

The ethical committee in the Faculty of Nursing, Sohag University was agreed to accomplish the study. There was no harm for studied elderly during application of the research. Informed witness consent was obtained from each participant after explanation of the study purpose. also; the researchers were confirmed confidentiality and anonymity. All the participants had the

right to uncompleted the study without any rational at any time.

Data collection:

Phase I: Preparatory phase: The researchers introduced themselves to the elderly people attending Sohag geriatric club and explained the purpose of the study, and assessed constipation among them and then include elderly people with constipation in the nursing intervention to reduce severity of constipation among them.

Phase II: Implementation phase:

- Elderly with constipation who fulfilled the inclusion criteria was interviewed individually by the researchers in the library of the Sohag geriatric club using tools in order to obtain the baseline data (Pre-test phase).
- Pre-test was carried out before the implementation of the nursing intervention to assess the severity of constipation among elderly people. Then development of The nursing intervention to reduce the severity of constipation among them. Finally, the post-test was executed one month after implementation nursing intervention to evaluate the severity of constipation.
- The nursing intervention was conducted in the period from the beginning of first of March 2019 till the end of October 2019. The work was conducted two days per week with an average of 4-5 elderly/day. The total number of sessions was three sessions for implementation nursing intervention, and the interview time was 30-45 minutes each session.
- The nursing intervention was conducted through giving educational sessions

about how to decrease the severity of constipation. The researchers used simple teaching methods such as: lecture, picture, video, discussion. The media handouts (booklet) prepared by the researchers and distributed to every participant at the end of the nursing intervention.

- The telephone numbers of all elderly were taken in order to organize for program's sessions.
- The content of the nursing intervention was divided into three educational sessions; first session included knowledge about definition of constipation, causes and risk factors, signs and symptoms, second session included management of constipation; dietary fiber, oral hygiene to facilitate eating and drinking and increase mobility. And finally third session included knowledge and practice about importance and examples of physical exercise, Optimization of toileting abilities and defecation postural modification as (squatting during bowel movements, a good functional position when sitting on a toilet, with the knees above the hips and the feet elevated).

Phase III Evaluation phase: This phase emphasized on estimating the effect of implementation of the nursing intervention on the severity of constipation through a comparison between pre & post-test. The post-test was done one month after implementation of the nursing intervention to assess the severity of constipation among elderly people.

Statistical analysis:

Data were collected and processed by using a statistical package for social sciences (SPSS version 20). Frequencies

and percentages were used for qualitative variables. Means, standard deviations, and medians were obtained for quantitative variables. Chi-square test was used for categorical variables. Results were considered statistically significant if $P < 0.05$ and very highly statistically significant if $P < 0.001$.

Results:

(Fig1) presents that 84 (34.4%) of studied elderly people (244), were having constipation detected by using constipation assessment scale.

Table (1) showed that frequency of constipation common among elderly range aged between 60 to 70 years, male and people living in urban areas.

Constipation was present in major of elderly population with chronic diseases and take medication. Moreover, above half (55.3%) of elderly with drank tea per day and about three fifths of them take dairy product (59.5%) experienced constipation. On the contrary, constipation was absent among most of elderly population who ate (fibers) fruits and vegetables 85.0 %.

Table (2): revealed that there was a statistical significant difference between elderly on mean of abdominal distention or bloating and change in amount of gas passed rectally before nursing intervention, while after nursing intervention program there was a statistical significant difference on mean of change in amount of gas passed rectally, oozing liquid stool, rectal fullness or pressure, small stool size, and urge but inability to pass stool.

Table (3): presented that the elderly patients suffered from intense (sever) constipation (40.5%) before the intervention, and become (1.2%) after application nursing intervention. There was

a high statistical significant difference in severity of constipation between before and after application the nursing intervention.

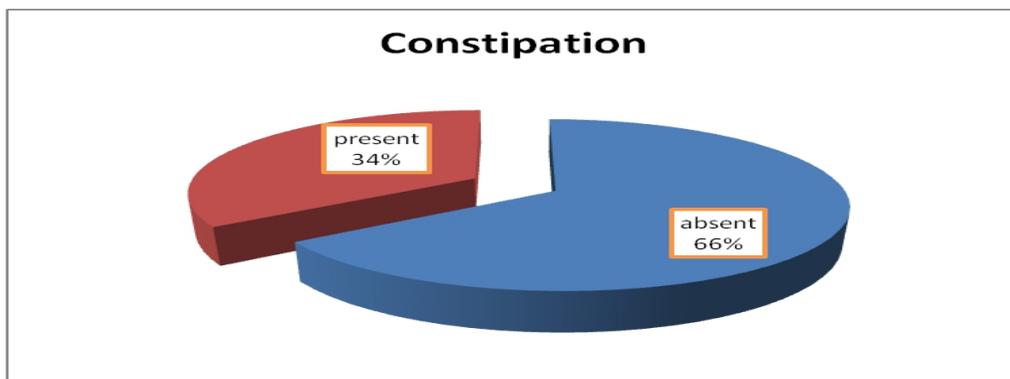


Figure (1): Frequency of constipation among the studied elderly.

Table (1): Demographic and clinical characteristics of studied elderly (N 244):

Items	Present of constipation (84)		Absent of constipation (160)		P-value
	No	%	No	%	
Age					
• 60-70	30	35.7	90	56.3	0.246
• 71-80	25	29.8	45	28.1	
• >80	29	34.5	25	15.6	
Mean± SD=	70.06 ± 7.73		60.52 ± 6.75		
Gender					
• Male	50	59.5	90	56.3	0.238
• Female	34	40.5	70	43.7	
Education					
• Illiterate	23	27.4	30	18.8	0.000*
• Write And Read	10	11.9	20	12.5	
• Preparatory	17	20.2	13	8.1	
• Secondary	12	14.3	40	25.0	
• University	22	26.2	57	35.6	
Marital Status					
• Married	54	64.3	100	62.6	0.140
• Single	1	1.2	2	1.2	
• Divorced	2	2.4	2	1.2	
• Widowed	27	34.1	56	35.0	
Residence					
• Urban	57	67.9	111	69.3	0.102
• Rural	27	34.1	49	30.7	

Occupation					
• Farmer	20.9	21.4	61	38.1	
• Technical work	7.6	31.0	23	14.4	
• Free business	7.8	8.3	9	5.6	0.000*
• Housewife	2.8	17.9	40	25.0	
• Retired	20.9	21.4	27	16.9	
Chronic disease #					
• Yes	68	81.1	61	38.1	0.009
• No	16	18.9	99	61.9	
Medication					
• Yes	76	90.2	24	15.0	0.230
• No	8	9.8	136	85.0	
Tea					
• Yes	46	55.3	35	21.9	0.230
• No	38	44.7	125	78.1	
Dairy products					
• Yes	50	59.5	89	55.6	0.66
• No	34	40.5	71	44.4	
Fibers					
• Yes	37	44.0	136	85.0	0.000*
• No	47	56.0	24	15.0	

Chronic diseases (diabetes mellitus, hypertension, heart disease, or anemia)

- There was a statistical significant difference

Table (2) Mean score of constipation assessment scale in the elderly before and after application nursing intervention (N 84).

Items	Pre-test		Post-test	
	Mean	P-value	Mean	P-value
Abdominal distention or bloating	1.1842	.000*	.3421	0.003
Change in amount of gas passed rectally	1.0789	.000*	.5000	0.000*
Less frequent bowel movements	1.3684	.005	.3158	0.018
Oozing liquid stool	1.2632	.006	.2895	0.000*
Rectal fullness or pressure	1.0000	.025	.2368	0.000*
Rectal pain with bowel movement	1.1053	.014	.3158	0.023
Small stool size	1.2368	.067	.3421	0.000*
Urge but inability to pass stool	1.3158	.205	.3421	0.000*

* There was a statistical significant difference

Table (3): Severity of constipation among elderly before and after application nursing intervention (N 84).

Severity of constipation	Pre-test		Post-test		P-value
	No	%	No	%	
Mild	9	10.7	64	76.2	0.000*
Average	33	39.3	19	22.6	
Intense	34	40.5	1	1.2	
Very intense	8	9.5	0	0.00	
Total	84	100.0	84	100.0	

* There was a statistical significant difference

Discussion:

Constipation is a frequently reported bowel symptom in the elderly with considerable impact on quality of life and health expenses. This study was conducted to assess the effectiveness of nursing intervention on the severity of constipation among the elderly.

The present study revealed about one third of studied elderly had constipation, this result was matched to a study done by **Mansouri et al. (2018)** who reported that constipation presenting more than one third in the elderly at the age of 60 years and older. This may be related to that with aging, increase comorbidities, reduced mobility, reduced hydration, and the psycho-social changes, which affect prevalence of constipation.

Regarding the demographic characteristics of the studied group, concerning age of studied elderly, present study revealed that the majority of studied sample age 60-70years and there was no significant relationship between constipation and age. This finding is in accordance with that of other studies **Miles. et al (2011)** and **Mohamed et al., (2015)** who reported that nearly two thirds of subjects are young old and supported by **Mansouri et al., (2018)**

who reported that there was no significant relationship between constipation and age. This finding inconsistent with **Farahat et al., (2019)** who studied " Risk factors for constipation among elderly attending family health center in Damietta District, Damietta Governorate, Egypt" and reported that the prevalence of constipation increased with increasing age, where most of elderly population more than 75 years experienced constipation. This difference between studies due to different setting of studies.

The findings represented that more than half of studied sample were male had constipation. This agrees with **Farg et al. (2020)**, who studied "Effect of Health Educational Program about Constipation on Elderly Quality of Life", and reported that more than half were male. This disagrees with **Black and Ford, (2018)** who reported constipation common among female than male. This difference may be related to male attend geriatric club more female who characterized by social role so that not need to attend geriatric club especially Upper Egypt.

The existing study also, showed that more than two thirds in both group from urban, this agrees **Zhang et al. (2015)** who found that in the Beijing region, elderly population in the urban areas had a higher prevalence in

constipation than rural areas. On the contrary with **Abd Allah et al., (2013)** who examined "Effect of nursing intervention on constipation among elderly in Zagazic city Sharkia governorate-Egypt", which reported that nearly two thirds of studied group were residing in rural areas. This difference due to difference setting of study and the majority of elderly people attended to Sohag geriatric club from urban.

The present study revealed that, more than four fifth of elderly people with constipation had chronic diseases, this agrees **Farg et al. (2020)** who reported that nearly three quarter of studied elderly people with constipation had chronic diseases. This may be explained by that elderly people with chronic disease heart diseases, diabetes or hypertension who adherent to medications e.g. Anticholinergic drugs - opiates- Calcium-channel blockers – antipsychotics can affect and lead to constipation.

Conclusion:

The study concluded that nursing intervention effective to decrease severity of constipation among elderly with constipation.

Recommendations:

Application of nursing intervention to manage and decrease the severity of constipation among elderly people and importance of implementing periodic health education program for gerontological nurses, other health care providers and caregivers about management and prevention of constipation among elderly people.

Concerning effect of nursing intervention on severity of constipation among elderly, The findings of this study indicated that more than two fifth of the elderly suffered from intense constipation before application the nursing intervention program compared with only (1.2 %) of them suffered from intense constipation post application the nursing intervention program. This agrees with **Mohamed et.al. (2015)** who reported that more than one third from studied elderly persons had severed constipation before application the program, and after application the program become elderly had sever constipation 12%. This result inconsistent with **Abd Allah et al., (2013)** who indicated that nearly three quarter of studied sample complained constipation and only nearly one third reported no constipation after application nursing intervention on constipation among the elderly.

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