

## EFFECT OF SUPPORTIVE NURSING MEASURES ON SELF-CARE PRACTICES AMONG ADULT COLOSTOMY PATIENTS

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### Abstract:

The presence of a permanent colostomy often leads to inevitable changes led to maladjustment and disordered bodily function. In addition to disruption of a number of aspects of the patients' private lives that will affect the patient's ability to perform self-care. Supportive nursing measures are essential to teach patients with colostomy how to integrate self-care into daily activities for enhancing self-care abilities, improving outcomes and decrease unnecessary hospitalization that can have a positive effect on lifestyle modification and the quality of life. **The aim:** Determine the effect of supportive nursing measures on self-care practices among adult colostomy patients. **Settings:** The study was carried out in the in-patient at the general surgical wards and in surgical out patients' clinics at the Main Mansoura University Hospital using Quasi-experimental research design. **Subjects:** 60 adult colostomy patients with permanent colostomy were randomly divided into study and control groups (30 patients in each). The data was collected for duration of one year and six months. **Tools:** Four tools were used for data collection; Bio-socio-demographic data sheet; Ostomy patient's knowledge questionnaire; Universal Self-Care Activities Check Lis and Ostomy Self-care Practices Check List. **Results:** The study findings revealed high statistical significant differences in favor of the study group regarding ostomy knowledge, practices of ostomy self care in addition to social, psychological and sexual status. **Conclusion:** The study group who had taken supportive nursing measures sessions experienced high significant positive impacts on their ostomy knowledge, self-care practices, psychosocial and sexual status than control group. **Recommendations:** Establish in colorectal surgical unit Supportive nursing measures by qualified Enterstomal nurse with necessary comprehensive reference materials.

**Key words:** Supportive Nursing Measures, Self-Care, Colostomy

### Introduction:

Colorectal stoma plays a key part in elective and emergency surgery. It is often necessary to prevent potentially

devastating complications or save life. <sup>(1)</sup> Colostomy is an opening into the bowel through open surgery or laparoscope, it

involves bringing a loop or end of the bowel to the surface of the skin.<sup>(2)</sup> Based on the type of surgery and the extent of the disease, colostomy might be temporary or permanent.<sup>(3)</sup> Approximately 100,000 new stomas created each year in the United States.<sup>(4)</sup> In the UK, more than 102,000 people have a stoma with a high proportion of colostomy, and that around 7,400 had permanent colostomy.<sup>(5)</sup> In Egypt, the incidence of colostomy approximately represents 600/year.<sup>(6)</sup> Colostomy formation remains a primary and effective life-saving surgical approach for patients with colorectal cancer (CRC).<sup>(7)</sup> CRC is a major health problem and is one of the most common indications for permanent colostomy.<sup>(8)</sup> It is one of the major causes of cancer death worldwide<sup>(9)</sup>, which accounts for approximately 10% of all incident cancers making it the third most common cancer in males and the second most common cancer in females.<sup>(10)</sup> In the United States, CRC is the third deadliest of all cancers, there was an estimate 134,490 new CRC cases in 2016.<sup>(11)</sup> In Egypt, CRC representing 4% of the total cancers, and 53% of gastrointestinal cancers, ranking number 6 of cancer.<sup>(12)</sup>

Enterostomal Nurse plays vital role for ostomy patients who suffer from a post-ostomy change. Applying Self-care(SC) theory, and respecting its essential aspects is an effective way to promote nursing care, and to help empower the patients to adapt to their surgery, research has stressed the importance of SC.<sup>(13, 14)</sup> SC is a broad term comprising everything that people do to maintain health, prevent illness, seek and adhere to treat, manage symptoms and side effects accomplish recovery and rehabilitation, and manage the impact of long term illness and disability, so it effectively guides the decision of health outcome.<sup>(15)</sup>

Supportive nursing measures (SNMs) for colostomy patients are

essential to learn how to integrate self-ostomy care into daily activities for enhancing SC abilities, improving outcomes and decrease unnecessary hospitalization that can have a positive effect on lifestyle modification and could improve clinical results, the health status, and the quality of life.<sup>(16)</sup> Several individual, social and environmental factors can influence SC. Thus, the development of nursing interventions, targeting the patient's needs, demands careful planning, the choice for the best approach and a rigorous evaluation of its effectiveness in optimizing the practice of SC and its translation into clinical outcomes.<sup>(17)</sup>

#### **Aim of the study**

This study aimed to determine the effect of supportive nursing measures on self-care practices among adult colostomy patients.

#### **Research Hypothesis**

Colostomy patients who attended the supportive nursing measures sessions exhibit higher knowledge and self-care practices scores than those who did not attend.

#### **Material and Methods**

##### **Materials**

**Design:** A quasi-experimental design was conducted.

**Setting:** This study was conducted in the inpatients and outpatient clinic of General Surgery Department, Mansoura University Hospital.

**Subjects:** A convenience sample of 60 adult patients with permanent colostomy and free from any chronic or psychiatric disorders and able to communicate were sequentially recruited into two groups; study and control group (30 patients in each). Study group (N = 30) who received the supportive nursing measures, and control group (N = 30) who received the conventional care.

**Tools:** The tools of the present study were:

- **Tool I: Bio-socio- demographic data sheet.** This tool was modified by the researcher after reviewed related literatures and consisted of two parts: **Part 1:** This part was related to patient's age, sex, marital status, level of education, occupation, religion, area of residence. **Part 2:** This part was related to patient's diagnosis, duration of the disease, current intake of medication, smoking, dietary habits, frequent stress and anxiety.
- **Tool II: Ostomy patient's knowledge questionnaire: Quality of Life Questionnaire:** This tool was used to assess patients' ostomy knowledge; This tool was developed by the researcher after extensive reviewing of the related literature. This questionnaire arranged in to 11 items. Each question was containing a group of answer points, each point has one grade, while no answer takes zero and the total score for patient's knowledge sheet depended on the numbers of grades he/she obtained regarding all questions. The total score allotted of was 89 distributed as: Disease process: (10 items), physical and psychological complications (14 items), stoma characteristics (3 items), effective pouching system (12 items), different ostomy appliances (5 items), colostomy pouching (8 items), peristomal skin care (7 items), colostomy irrigation (16 items), nutrition (7 items), activity (3 items) and medication (4 items).
- **Tool III: Universal Self- Care Activities checklist:** This tool was used to assess universal SC activities of the studied sample after 2 months from the hospital discharge. This tool was used by the researcher in the master thesis, then it modified for the current study after reviewed related literatures. It included 6 structured

parts related to universal SC activities to meet daily physical, social and psychological needs.

- **Tool IV: Ostomy Self- Care Checklist:** This tool was developed and used also by the researcher in master thesis, then some minor modifications were done after reviewed related literatures for the current study to assess specific SC practices of ostomy patients. Each step of performance was rated from 0-2. The scores were being allotted "Most of times "which take score (2), " many times "scored as (1), and rarely scored as (zero). This tool arranged in to 5 items, whereas, the total score allotted of the ostomy SC practices was 102 distributed as: Stomal, peristomal skin, and pouching system care (38), Bowel alteration and its relieving measures (28), Medication (4), Psychological problems (10), and Physical problems (22).

**Methods:**

- Data were collected on one year and six months from (April, 1, 2013 to October, 26, 2014). Verbal explanation of aim of the study was explained by the researcher to all study sample.
- Permission to carry out the study was obtained from the responsible authorities after explaining the aim of the study. Informed consent was obtained from study sample.
- The four tools of the study were revised by 10 experts to test for its content validity and feasibility from medical and nursing academic staff, Mansoura and Alexandria University.
- Instructional booklet of the study was revised by 5 experts in the field of medical and nursing staff form Mansoura University for its content validity, and the necessary modifications were done.
- Reliability of tools were done using

Cronbach's alpha test of the questions of this study and it was 0.813, which indicates a high level of internal consistency for our scale used in this study.

- A pilot study was conducted on 6 patients who not included in the study to test the feasibility, applicability, and reliability of the tool.
- The researcher started collection of data with control group then with study group. For both groups data was collected by using Bio-socio-demographic sheet and (patient's ostomy knowledge sheet.
- Supportive Nursing Measures for colostomy patients were applied by the researcher at the surgical wards and out patients' clinics which was implemented on **three phases:**  
**Assessment Phase:**
  - In this phase every patient interviewed individually one time preoperative aimed to assess patient's bio- socio demographic status, and to assess knowledge and information related to ostomy received from the staff nurse at the surgical word.
  - This phase ranged from one and half to two hours to collected data based on the health status of the patient and how he/ she to receive and answer questions.
  - The available laboratory investigations were obtained from patients report.
  - Measuring body weight. height, and BMI, blood pressure for each patient in both groups. **Implementing Phase:**
    - This phase performed only to the study group by using SNMs, which divided into **two parts:** Educational part (theoretical and practical support); psychological and social part (Psychological and social support), The two supportive parts included **six teaching sessions as follows:** 4 sessions for Educational part (3 for theoretical and one for practical

parts), one for psychological & social part and the final session to reinforce the content which given by the researcher.

- The sessions were organized and scheduled by the researcher for patients undergoing permanent colostomy at the surgical wards in Mansoura Main University Hospital. The education meeting is held inside of ward.
- The participants include the patient, and most of time one or two close relatives whom will take major responsibility for patient's rehabilitation after discharge, and some times charge nurse. The duration of each session was varied which ranged from two to three hours according to the contents needed and the response of patient to inform patient about colostomy surgery and its management supported by patient' booklet and videos about colostomy care.
- During theoretical sessions, the most important information was given regarding nature, causes, types, stoma sitting, characteristics, pouches, stomal complications and how to prevent and to manage.
- During practical session, the researcher learns and help the patient to implement stoma and preistomal skin care efficiently.
- During psychological and social session, this session divided into two meeting; first meeting included only patient and researcher to reinforce the patient to express all felling, and to give to him/her advice suggestions before discussing the concerns in the second meeting with partner or family.

**Evaluation Phase:**

- This phase was performed to both groups at the out patients' surgical clinic one time for each patient after two months from patient discharge

and implemented SNMs (post test) to determine the effect of SNMs on self care practices of colostomy patients.

- This phase included reassessment of the patient's ostomy knowledge and assessment of daily living activities and specific ostomy SC practices using all the following tools: Patients' ostomy knowledge questionnaire, Universal self-care activities check list, and Ostomy self-care practices sheet check list.

**Ethical consideration:**

- The researcher obtained informed verbal consents from participants after clarifying the study aim and procedures. They were informed about their rights to refuse participation or withdraw at any time of the study. Confidentiality of all obtained information was ascertained.

**Limitation of the study:**

- Difficulty to collect preoperative data from patients who had urgent surgery

therefore their family were participated in completion of this data.

- Some patients did not attend after 2 months to evaluate the implemented Supportive Nursing Measures, and some withdrawn from the research that made the data collection took long time, in addition to non availability of laboratory investigation some times.

**Statistical analysis**

Continuous data were expressed as mean  $\pm$  standard deviation (SD) while the categorical data were expressed as number and percent. All continuous data were tested for the skewness and kurtosis prior to any analyses. Comparisons between continuous data were performed using the independent sample Student's t test mean while the comparisons between the categorical data were performed using the chi square test. Statistical significance was determined at  $P < 0.05$ . All calculations were made using SPSS version 20.0.

**Results:**

**Part 1: Bio- socio-demographic data between study and control groups at baseline evaluation**

**Table 1.** Comparison of the bio- socio-demographic data between study and control groups:-

General Characteristics	Study N=30		Control N=30		Chi square test	
	N	%	N	%	X <sup>2</sup>	P
<b>Age groups(years)</b>						
20<35	7	23.3	5	16.7	0.799	0.671
35<50	9	30	12	40		
50 and more	14	46.7	13	43.3		
<b>Mean <math>\pm</math>SD</b>	45.83 $\pm$ 11.67		45.50 $\pm$ 11.13		0	0.910
<b>Gender:</b>					0.073	0.787
Male	19	63.3	20	66.7		
Female	11	36.7	10	33.3		
<b>Marital status</b>					2.577	0.462
Single	6	20.0	6	20.0		
Married	17	56.7	20	66.6		
Widow	6	20.0	2	6.7		
Divorced	1	3.3	2	6.7		
<b>Level of education</b>					4.185	0.382
Illiterate	4	13.3	4	13.3		
Read and write	4	13.3	4	13.3		
Primary education	5	16.7	1	3.3		
Secondary education	11	36.7	10	33.3		
University	6	20.0	11	36.7		
<b>Occupation</b>					5.313	0.070
Manual work	12	40.0	11	36.7		
Mental work	3	10.0	10	33.3		
No work	15	50.0	9	30.0		
<b>Residence</b>					0.067	0.795
Urban	16	53.3	17	56.7		
Rural	14	46.7	13	43.3		

**Table (1).** The table showed that, the mean age of the study and control patients was (45.83 ±11.67 and 45.50 ±11.13 respectively), the highest percent was (46.7% and 43.3%) respectively in the age bracket 50 years or more. Also the highest percent in study and control patients was males and married (63.3% ,56.7% and 66.7% ,66.7%) respectively. It was found

that (36.7%) of the patients in both study and control patients had (secondary and university education respectively). Half of the study patients (50%) were unemployed, while 36.7% of control patient had manual work. More than half of both study and control patients came from urban area (53.3% and 56.7%) respectively.

**Part 1: Table 2:** (continue): Comparison of the Bio- socio-demographic data between study and control patients at baseline evaluation:

General Characteristics	Study N=30		Control N=30		Chi square test	
	N	%	N	%	X <sup>2</sup>	P
<b>Diagnosis</b>						
-Colorectal cancer	13	43.3	16	53.3	6.999	0.429
-Bowel injury	4	13.3	2	6.7		
-Intestinal obstruction	4	13.3	2	6.7		
-Chronic diverticulitis	4	13.3	3	10		
-Chronic inflammatory bowel disease	4	13.3	7	23.3		
-Ischemia	1	3.3	0	0		
<b>Duration of disease</b>						
<6 months	10	33.3	5	16.7	2.222	0.136
>6 months	20	66.7	25	83.3		
<b>Current intake of medication</b>						
by doctor	15	68.2	20	83.3	1.775	0.412
by patient	2	9.1	1	4.2		
all	13	43.3	9	30		
<b>Smoking</b>	12	40.0	14	46.7	0.271	0.602
<b>Dietary habits</b>						
Fatty diet	20	66.7	25	83.3	2.222	0.136
Spicy diet	16	53.3	18	60.0	0.271	0.602
Salty diet	17	56.7	13	43.3	1.067	0.302
<b>Stress and anxiety</b>						
copied	13	43.3	12	40.0	0.069	0.793
cannot cope	17	56.7	18	60.0		

statistically significant (P value ≤ 0.05)

**Part1: Table 2 (continue):** Regarding the diagnosis and duration of the disease preoperative, the table demonstrates that, the highest percentage in study and control patients (43.3%, 66.7% and 53.3%, 83.3%) respectively was colorectal and colostomy related diseases

more than 6 months. It was found that 40% of study patients, and 46.7% of control patients were smoker, also 68.2% of study patients and 83.3% of control patients had medication prescribed by physician preoperative. The majority of both study and control patients had fatty diet preoperative (66.7% and 83.3%)

respectively. On the other hand, more than half of patients in both study and control patients cannot cope with stress (56.7% and 60.0%) respectively.

**Table 3.** Comparison of the ostomy patient's knowledge between study and control groups at baseline evaluation pre implementing supportive nursing measures:

Patient's Knowledge	Score Allocated	Study N=30		Control N=30		Student's t test	
		Mean	±SD	Mean	±SD	T	p
Definition of colostomy	1	0.16	±0.38	0.07	±0.25	1.201	0.235
Causes of colostomy	7	1.23	±0.77	1.13	±0.51	0.592	0.556
Types of colostomy	2	0.73	±0.58	1.03	±0.56	2.039	0.046*
Complications	14	1.53	±1.85	1.37	±1.47	0.386	0.701
Stoma characteristics	3	0.27	±0.52	0.53	±0.57	1.889	0.064
The effective pouching system	12	2.00	±1.72	2.57	±1.04	1.543	0.128
Different ostomy appliance and pouching system	5	0.73	±1.01	1.13	±1.01	1.532	0.131
Stoma pouching	8	1.50	±1.17	1.77	±1.01	0.948	0.347
Proper skin care	7	0.37	±0.72	0.57	±0.86	0.979	0.332
Colostomy irrigation	16	2.27	±2.16	2.40	±1.69	0.266	0.791
Nutrition	7	1.00	±1.05	1.2333	±0.77	0.980	0.331
Activity	3	0.70	±0.70	0.8000	±0.55	0.614	0.542
Medication	4	0.17	±0.46	0.1667	±0.38	0.000	1.000
<b>Total Knowledge</b>	89	12.67	±9.80	14.77	±6.6	0.974	0.334

\* statistically significant (P value  $\leq$  0.05)

**Table (3).** The table shows that, the study and control patients had knowledge regarding causes of colostomy at mean score was = (1.23±0.77 and 1.13±0.51) respectively. Knowledge regarding types of colostomy for both study and control groups was showed mean score at (0.73 ±0.58 and 1.03±0.56) respectively. In relation to knowledge of colostomy complications, effective pouching system, stoma pouching, and proper skin care, it was found that, both study and control patients had score with mean = (1.53±1.85, 2.00±1.72, 1.50 ±1.17, 0.37±0.72 and 1.37 ±1.47, 2.57±1.04, 1.77±1.01, 0.57±0.86) respectively. The results revealed that, the study and control patients had knowledge regarding

stoma characteristics at mean age = (0.27±0.52, and 0.53±0.57) respectively. Also the results revealed that, both study and control patients had knowledge regarding nutrition, activity, and medications at score with mean = (1.00 ±1.05, 0.70± 0.70±0.46, 0.17±0.46, and 1.2333±0.77, 0.8000±0.55, 0.1667±0.38) respectively. On the other hand, the study and control patients had knowledge regarding different ostomy appliance and pouching system at score with mean = (0.73±1.01 and 1.13±1.01) respectively. Accordingly, total ostomy knowledge mean score of the study and control patients was found to be (12.67 ±9.80 and 14.77±6.6) respectively.

**Table 4.** Comparison of the ostomy patient's knowledge between the study and control groups post implementing supportive nursing measures:

	Score Allotted	Study		controls		Student's t test	
		Mean	±SD	Mean	±SD	t	p
Definition of colostomy	1	0.80	±0.41	0.30	±0.47	4.427	<0.001*
Causes of colostomy	7	4.50	±1.14	1.93	±1.01	9.224	<0.001*
Types of colostomy	2	2.00	±0.00	1.70	±0.47	3.525	<0.001*
Complications	14	9.87	±2.16	4.80	±1.35	10.892	<0.001*
Stoma characteristics	3	2.37	±0.49	2.13	±0.51	1.812	0.075
The effective pouching system	12	8.03	±1.45	4.73	±1.05	10.102	<0.001*
Different ostomy appliance and pouching system	5	4.67	±0.55	2.87	±0.82	10.010	<0.001*
Stoma pouching	8	5.73	±0.83	3.23	±1.01	10.509	<0.001*
Proper skin care	7	4.67	±1.15	2.37	±0.99	8.249	<0.001*
Colostomy irrigation	16	11.87	±2.2	6.5	±1.59	10.950	<0.001*
Nutrition	7	5.30	±0.70	2.87	±0.94	11.382	<0.001*
Activity	3	2.33	±0.61	1.80	±0.41	4.000	<0.001*
Medication	4	2.80	±0.71	1.13	±0.73	8.936	<0.001*
<b>Total Knowledge</b>	89	64.93	±8.38	36.37	±7.85	13.631	<0.001*

\* statistically significant (P value ≤ 0.05)

**Table 4.** shows that, there is a highly statistically significant difference between study and control groups post implementation of SNMs in relation to ostomy patient's knowledge about

colostomy (causes, types, complications), effective and different ostomy pouching system, stoma pouching, proper skin care, colostomy irrigation, nutrition, activity, and medication).

**Table 5.** Comparison of Family obligation and Utilization of leisure time between study and control groups post implementing supportive nursing measures:

Family obligation and Utilization of leisure time	Study N=30						Control N=30						Chi square test	
	Most of time		Many times		Rarely		Most of time		Many times		Rarely			
	N	%	N	%	N	%	N	%	N	%	N	%	X <sup>2</sup>	P
Spend quality time with your family	12	40.0	17	56.7	1	3.3	6	20.0	15	50.0	9	30.0	8.525	0.014*
Good relationship with family	19	63.3	7	23.3	4	13.3	9	30.0	12	40.0	9	30.0	6.810	0.033*
Share recreational time with your family and friends	0	0.0	17	56.7	13	43.3	0	0.0	5	16.7	25	83.3	10.335	<0.001*
Having a time for daily walking	0	0.0	22	73.3	8	26.7	0	0.0	5	16.7	25	83.3	19.461	<0.001*
Having a time for climb stairs	0	0.0	0	0.0	30	100	0	0.0	0	0.0	30	100	0.000	1.000
Having a time for washing clothes	6	20.0	2	6.7	22	73.3	6	20.0	3	10.0	21	70.0	0.223	0.894
Watching T.V	24	80.0	4	13.3	2	6.7	19	63.3	7	23.3	4	13.3	2.066	0.356
Listening radio	1	3.3	4	13.3	25	83.3	0	0.0	3	10.0	27	90.0	1.220	0.543
Reading daily newspaper books and magazine	1	3.3	7	23.3	22	73.3	9	30.0	9	30.0	12	40.0	9.591	0.008*
Going to cafe, or club	2	6.7	13	43.3	15	50.0	0	0.0	3	10.0	27	90.0	11.679	0.003*

\* statistically significant (P value ≤ 0.05)

**Table 5.** demonstrates that, there is statistically significance differences between study and control patients in relation to spending quality time with family (P=0.014), good relationship with family (P= 0.033), reading daily newspaper books and magazine (P= 0.008), and going to cafe, or club (P =

0.003). On the other hand, the result shows that, there is a high statistically significant differences between study and control patients in relation to sharing recreational time with family and friends, and having a time for daily walking with (P= <0.001).

**Table 6.** Comparison of the stomal, peristomal skin, and pouching system care between study and control groups post implementing supportive nursing measures:

Stomal, peristomal skin, and pouching system care	Study N=30						Control N=30						Chi square test	
	Most of time		Many times		Rarely		Most of time		Many times		Rarely		X <sup>2</sup>	p
	N	%	N	%	N	%	N	%	N	%	N	%		
Hand washing with soap and water before stoma	21	70.0	6	20.0	3	10.0	10	33.3	10	33.3	10	33.3	8.762	0.013*
Emptying the pouch when it is one third full	18	60.0	11	36.7	1	3.3	5	16.7	21	70.0	4	13.3	12.273	0.002*
Performing ostomy care in bath room	28	93.3	1	3.3	1	3.3	27	93.3	2	6.7	1	3.3	0.352	0.839
<b>If using reusable pouching system:</b>														
-Clean the pouch by warm tap water and soup.	15	50.0	15	50.0	15	50.0	3	10.0	22	73.3	5	16.7	13.324	<0.001*
-Using brush for pouch cleaning	5	16.7	16	53.3	9	30.0	0	0.0	3	10.0	27	90.0	22.895	<0.001*
-Drying the pouch after cleaning	14	46.7	16	53.3	0	0.0	2	6.7	6	20.0	22	73.3	35.545	<0.001*
-Keep pouch in a dry and cold place away from sun and high temperature	14	46.7	16	53.3	0	0.0	3	10.0	9	30.0	18	60.0	27.078	<0.001*
Gentle removing the pouch by pushing the skin rather than pulling the adhesive	26	86.7	4	13.3	0	0.0	13	43.3	17	56.7	0	0.0	12.381	<0.001*
Assessing the stoma	20	66.7	10	33.3	0	0.0	6	20.0	17	56.7	7	23.3	16.353	<0.001*
Clean peristomal skin with warm tap water and dry it before applying a new pouch	27	90.0	3	10.0	0	0.0	4	13.3	20	66.7	6	20.0	35.630	<0.001*
Avoid using soap for cleansing stoma and peristomal skin	13	43.3	17	56.7	0	0.0	2	6.7	20	66.7	8	26.7	16.310	<0.001*
Avoid Scrub the skin during cleansing	19	63.3	11	36.7	0	0.0	4	13.3	22	73.3	4	13.3	17.449	<0.001*
Opening of the skin barrier is about 1/8 inches larger than the stoma size	23	76.7	7	23.3	0	0.0	5	16.7	19	63.3	6	20.0	23.110	<0.001*
Avoid frequent pouch changing if not necessary	19	63.3	11	36.7	0	0.0	6	20.0	19	63.3	5	16.7	13.893	<0.001*
Shaving peristomal hair using safety razor moving out ward away from the stoma	26	86.7	2	6.7	2	6.7	14	46.7	11	36.7	5	16.7	11.116	0.004*
Dry the peristomal skin after cleansing	19	63.3	10	33.3	1	3.3	1	3.3	12	40.0	17	56.7	30.604	<0.001*
Using peristomal skin protectors	15	50.0	13	43.3	2	6.7	0	0.0	7	23.3	23	76.7	34.440	<0.001*

\* statistically significant (P value ≤ 0.05)

**Table 6.** shows that, high percent of the study patients most of time washing their hands and emptying the pouch when it is one third full than control patients (70%,60.0% and 33.3%, 16.7%) respectively with statistically significance differences (P= 0.0130 and P= 0.002 respectively). In relation to caring of reusable pouching system, it was found

that, there are a high significance differences between the study and control group regarding clean the pouch by warm tap water and soup, using other substances for cleansing the pouch, using brush for pouch cleaning, drying the pouch after cleaning, and keep pouch in a dry and cold place away from sun and high temperature (P= <0.001).

The results demonstrate that, the majority of the study patients most of time removing the pouch in a gentle way and assessing the stoma than control patients (86.7%, 66.7% and 43.3%, 20.0%) respectively with (P = <0.001). The table shows that, the high percent of study patients using most of times warm tap water for cleansing peristomal skin and dry it before applying a new pouch, avoid using soap or scribing it during cleansing than control patients (90.0%, 43.3%, 63.3% and 13.3%, 6.7%, 13.3%) respectively with (P = <0.001).

Also there are a high statistically significance differences between study and control patients in relation to opening the skin barrier is about 1/8, refrain from frequent pouch changing if not necessary, dry peristomal skin after cleansing, and using peristomal skin protectors with (P = <0.001). In addition, the table shows that, the study patients using most of times a safety razor for shaving peristomal skin hair using safety razor than control patients (86.7% and 46.7) respectively with (P=0.004).

**Table 7.** Comparison of the Psychological problems between study and control groups post implementing supportive nursing measures:

	Study N=30						Control N=30						Chi square test	
	Most of time		Many times		Rarely		Most of time		Many times		Rarely			
Psychological problems	N	%	N	%	N	%	N	%	N	%	N	%	X <sup>2</sup>	p
Feeling of worries and fears when dealing with Ostomy	6	20.0	20	66.7	4	13.3	19	63.3	10	33.3	1	3.3	11.893	0.003*
Feeling that, it is an unpleasant thing	7	23.3	21	70.0	2	6.7	22	73.3	8	26.7	0	0.0	15.586	<0.001*
Feeling with embarrassment	16	53.3	12	40.0	2	6.7	30	100	0	0.0	0	0.0	18.261	<0.001*
Feeling of low self-esteem and self confidence	16	53.3	9	30.0	5	16.7	30	100	0	0.0	0	0.0	18.261	<0.001*
Ostomy affects the desire of and enjoyment with sexual relation	8	26.7	11	36.7	11	36.7	26	86.7	0	0.0	4	13.3	23.796	<0.001*

\* statistically significant (P value ≤ 0.05)

**Table 7.** showed that, study and control groups had feeling of worries and fears when dealing with ostomy (20% and 66.7%) respectively with statistically significance difference (P=0.003). On the other hand, the majority of control patients had most of time a psychological problems regarding feeling the stoma is an unpleasant thing, embarrassment, low self-esteem and low self confidence, and ostomy affects the desire of and enjoyment with sexual relation than study patients (73.3%, 100%,100%,86.7% and 23.3%, 53.3%, 53.3%, 26.7%) respectively with a high statistically significance difference (P= <0.001).

**Discussion:**

The findings of the present study revealed no statistical differences in bio-Socio-demographic data between the study and control groups. In the current study it was found that, the highest percentage of the studied sample was 50 years and more is consistent with their diagnosis, In the same direction, the study carried by **(Magazi, 2010)** at Zagazig University reported that, the high percent of the studied sample was in the age category 46-60 years old. Their rational was, the age greater than 40 years are risk factor of CRC, the main cause for colostomy. <sup>(18)</sup>

According to the reasons for colostomy. The present study revealed that, in the studied sample the most common reason for colostomy was CRC. In the same direction (**Rafii, Naseh & Yadegary, 2012; Villafranca et al, 2015**) reported that, the most common disease that might lead to colostomy was CRC. (19,20)

The majority of the studied sample were males, it can be explained in light of fact that, the highest percentage of the studied sample were smoker, eat fatty food, can't cope with the stress. The study conducted by (**Mohey El Di, Hasan, Abdel Hameed & Abdel Aziz, 2014**) is in accordance with the finding of the current study who revealed that, more than three fifth of studied sample was males. (21) The studied conducted by (**Zandonai, Sonobe, & Sawada, 2012; Baena & Salinas, 2015**) also supported the current study findings indicated that, the development of CRC may be due to fatty diet and changes of life style. (22,23)

In the current study, more than half of both groups were married and came from urban area. The highest percent in the study group was for secondary education, while in the control group was for university education level. This may be related to the fact that most of the study subject came from urban areas with high socioeconomic status. half of the study patients did not work while, 36.7% of control group had manual work.

Regarding ostomy knowledge before and after implementing SNMs, the current study findings reported that, before implementing SNMs sessions there was no significant differences between both groups except in the knowledge related to the types of colostomy, it was found that, the control group had a high mean age score compared to the study group ( $P=0.04$ ). While, post SNMs, there was a high significant difference between the study and control groups, study group had a high

significant improvement than control group ( $P= <0.001$ ). In the same direction, research conducted by (**Gautam, Koirala, poudel & Poudel, 2016**) indicated that, the mastery of ostomy management knowledge for studied sample in the postoperative phase was insufficient. (24) The current stud is in general agreement with the study conducted by (**Mohamed & Mohamed, 2014**) who found a highly statistical significant improvement in total knowledge scores post intervention regarding colostomy and its care. (25) The studies findings by (**Lo et al, 2011 & cheng, Meng, Yang & Zhang, 2013**) also support our findings. It can be explained in the fact of known that, SNMs had high significant positive impacts on patients to improve their knowledge about their colostomy. (26,27)

Regarding family obligation and utilization of leisure time. Post implementing SNMs session, the current study revealed that, there was a high significant differences between the study and control group in the activities regarding family obligation and utilization of leisure time, ( $P= <0.00$ ) in relation to (sharing recreational time with his family, daily working, going to cafe or club). Finally, it was found also a significant difference between study and control group in spending quality time and good relation with their families ( $P= <0.014$  &  $P= 0.033$ ) respectively. In the same line (**Bazalinski, Salacinska, Wiech & Kozka, 2014**) reported that, the personal, familial and social lives of 56.5% of the patients in their study were negatively affected by stoma. (28) The study by (**Shafy, Kaur, Das & Gupta, 2012**) in accordance with the current study findings reported that, most of the studied sample were experienced a reduction in their usual activities, decreased participation in every day's activities. (29) On the other hand, the study finding by (**Abu El-Fadl & Hussan, 2013**) also found that, a high percent of

ostomy patients experienced reduction in pleasurable activities and their social and family lives deteriorated.<sup>(30)</sup> It can be explained that, interventional group who received SNMs session with social support had a positive significant effect on their family and their leisure time. It can be also justified that, the study group had a significant improvement on their ostomy knowledge that may affect positively on patient- family relation and leisure time. **(Karabulut, Dinç & Karadag, 2014)** reported that, patients who demonstrated higher social adaptation levels, received sufficient stoma care knowledge and were able to perform stoma care independently.<sup>(31)</sup> This finding also support current findings.

Regarding the performance of the specific ostomy SC in relation to stoma pouching and PS care. In the current study results, there was high significant differences between the study and control groups in performing skills steps regarding stoma pouching and peristomal skin care. This result showed that, post educational support, majority of the studied patients most of times performing skills steps compared to control group. This result was supported by **(Hegazy, Ali, Mahmoud, &Abou-Zeid, 2014)** who found that there was a significant improvement in self- care practices after applying educational guide lines compared to pre assessment.<sup>(32)</sup> In addition, **(Crawford et al, 2012)** found that, there are papers that indicated the individuals gain positive self- care behaviors about stomas after education.<sup>(33)</sup> Furthermore, in the same direction the researcher experience by **(Mohamed& Mohamed, 2014)** revealed that, self- care management skills in the study patients were important such as the ability to perform normal stoma care and understand how to prevent and treat potential complications.<sup>(25)</sup>

Regarding psychological status, in the results of the current study, it was

found high significant differences between the study group in relation to psychological status regarding (feeling of worries and fears when dealing with ostomy) was ( $P= < 0.003$ ), while ( $P= < 0.001$ ) was for feeling with embarrassment, low self steam and confidence). In the same direction the results by **(Wu & Yan; Ye, 2011)** revealed that, educational program had physical, emotional, social significant positive impact on the study patients.<sup>(34)</sup> In addition, the results also by **(Wang, 2010; Usta, 2012)** reported that, patients who required support from family and relative contributed to healthy psychological functioning.<sup>(35,36)</sup> The current study results supported also by the studies results conducted by **(Bonill et al, 2014; Salome &Almeida, 2014; Torres et al, 2015; Gozuyesil, Taylan, Manav& Akil, 2017)** reported that, studied sample had a negative body image and low self esteem.<sup>(37,38, 39,40)</sup> It can be explained in light of fact that, SNMs had a significant positive effect on psychological status for ostomy patients. While the findings in the studies contacted by **(Ozturk et al, 2015; Harputlu et al, 2017)** were in contrast with the current study finding, found that, self-esteem of colostomy patients not to be affected.<sup>(41,42)</sup>

Regarding sexual status, in the current study results, there was high significant differences between the study and control group regarding sexual status in relation to (ostomy affect desire and enjoyment with sexual relation), ( $P= 0.001$ ). In the same direction, the results by **(Wehida, Ibrahim& Abd El-fatah, 2015; Ozturk et al, 2015)** revealed that, patients with ostomy experienced problems such as decrease in sexual activity frequencies, sexual desire, and pleasure.<sup>(43,41)</sup> The study findings by **(Gozuyesil et al, 2017)** in the same line with the current study findings, reported that, more than half of studied sample with

ostomy experienced decrease in their sexual act and 44.1% experienced absence of sexual desire in their spouse.<sup>(40)</sup> The study carried out by (Kimura, Kamada, Guilhem & Fortes, 2013) greatly supported the current study results showed that, post educational program there was increase score of knowledge regarding sexual issues (1.7667± 7738) than pre educational program (200±40684).<sup>(44)</sup>

#### Conclusion

Based on the findings of the current study, it can be concluded that: The study group who received SNMs sessions experienced high significant impacts on their ostomy knowledge and, self-care practices, and on social relation than control group.

#### Recommendations:

According to results of this study, the following suggestions are recommended:

1. Nurses should spend more time with patients to meet their informational physical, psychological, and psychosexual needs through planned program.
2. Nursing managers can prepare their staff working in colorectal surgery department through course in order to provide care and support for patients with ostomy.
3. Exploring the needs of spouses of patients with a stoma, and identifying relevant interventions aimed at this specific population. Especially, there should be focus on the information needs as well as a need for knowledge gain, as spouses seem to help and support the patient in different ways, including stoma handling.
4. Further studied to investigate the effect of SNMs on patients with permanent colostomy regarding, nutritional problems, bowel alterations, peristomal complication their intervention and management.
5. Further studies to investigate the effect of follow up patient post hospital discharge on their health out come.
6. Establish SNMs in the surgical departments especially in the colorectal surgeries with qualified enterstomal nurses and necessary comprehensive reference material as training manual and visual materials.
7. Develop training workshops regarding the application of SNMs as a part of in-service training for nurses in the colorectal surgical units.
8. Early conduction of SNMs during preoperative phase that encourage self care practices.
9. Construct an educational manual on SNMs that constitutes of two guides; one for Health care providers and the other for the patients.

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