

Outcomes of Educational Guidelines on Awareness and Self – Efficacy among Patients with Permanent Colostomy

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Abstract: Aim: This study aimed to evaluate the outcomes of educational guidelines on awareness and self - efficacy among patients with permanent colostomy. **Subjects and Methods:** A quasi-experimental design was utilized in this study, that was conducted in the Outpatients Clinics at El- Demerdash Surgical Hospital and Ain Shams Specialized Hospital which is affiliated to Ain Shams University. A purposive sample of (90) adult patients from both genders with permanent colostomy were taken from the above mentioned settings. The study tools were: 1) Patients' interviewing questionnaire (pre / post guidelines) to assess the knowledge about colostomy care. 2) An observation checklist (pre / post guidelines) to evaluate studied patients' practices regarding colostomy care. 3) Hamilton Anxiety Rating Scale (pre / post guidelines) to assess anxiety level. 4) Ostomy Skin Tool assessment (pre/ post guidelines) to detect the extent and severity of peristomal skin complications and 5) Stoma Self- Efficacy Scale (pre / post guidelines) to predict coping with difficulties of the disease. **Results:** More than half of the studied patients had unsatisfactory level of knowledge and practices pre- guidelines, added to poor levels of anxiety and self - efficacy. Moreover, ostomy skin complications had more significant improvement post guidelines. **Conclusion:** On the light of the current study results, it can be concluded that, educational guidelines had a positive effect on improving awareness (knowledge and practices) and self - efficacy among patients with permanent colostomy. **Recommendations:** Further studies should be carried out on a large number of patients with colostomy for evidence of the results and generalization.

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1. Introduction:

Stoma patients have a surgically created opening on the abdomen involving parts of the gastrointestinal tract. In colostomy surgery, normal bowel function is interrupted and waste is passed through the abdominal wall through an opening called a stoma into an appliance that must be emptied periodically. If the distal rectum and anorectal sphincter mechanism are removed, the colostomy is permanent. Colostomy may be the best and safest form of treatment for a number of conditions including acute diverticulitis, rectal cancer, trauma, or inflammatory bowel disease (Kieghley, 2009 Pringle & swan, 2011 and Rafii *et al.*, 2013).

It is estimated that there are approximately 95,000 people living with a colostomy in the UK and that around 7,400 had permanent colostomies which carried out each year. In the future, the number of colostomies may increase (Mohamed *et al.*, 2012). The incidence of colostomy in National Cancer Institute in Egypt approximately 600/year. It differ from many other surgical Hospitals (NCI, 2012).

Patients with colostomy face many difficulties both physical and psychological, added to the long term problems and impact of colostomy on patient's condition and interference with day-to-day living. In

such circumstances, it is worthwhile to assess life style in the evaluation of the outcomes of various therapeutic procedures along with their final impact on patients' lives. Making good decisions to control disease complications, treatment, and improving life style is a very important goal in treating and caring for patients with colostomy (Adel *et al.*, 2008 and Cox *et al.*, 2011). Furthermore, the bowel alteration such as diarrhea, constipation, impaction of stool and/or excessive gases is considered sources of problems for colostomy patients. In addition, other sources of problems include skin irritation, irrigation of colostomy and application of pouching system correctly, problems of leakage and/or presence of bad odour. Additionally, the presence of colostomy itself is considered as a big problem which affects the body image of those patients, reduction in pleasurable activities and creates psychological problems as depression and anxiety (Hasler & Traber, 2008 and Rondelli, 2009).

Self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that influence over events affecting their lives. The beliefs determine how people feel, think, motivate themselves and behave, added to production diverse effects through: cognitive, motivation, affective

and selection processes. People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided. In contrast, people who doubt their capabilities, away from difficult tasks which they view as personal threats (**Gapińska et al.,2008** and **Cheng et al.,2013**). People undergoing ostomy challenge with multiple physical, psychological and social complications. However, Self-efficacy may lead them to the acceptance of stoma, adaptation with it and improve quality of their life (**Simmons et al.,2007** and **Helen et al.,2008**).

Caring for colostomy patients have an important role to play in relation to information provision and reassurance. management of those patients has become increasingly significant within the healthcare provision due to increased incidence and prevalence of this condition. It is important to understand the impact that colostomy can have upon on patients` life to help them. Teaching the patients how to care for an ostomy can be a challenging experience, added to, they needs encouragement, support and counseling to learn how to integrate self ostomy care into daily activities (**Hocevar & Gray, 2008** and **Potter & Perry, 2011**).

Significance of the study:

Colostomy surgery saves many lives and returns patients to better health and full productive life. It complex physical, psychological, social and spiritual issues, even if the surgery is a complete success (**Hussein & Aboelfadel, 2008** and **Black, 2011**). Various studies have shown that, the colostomy patients were facing many problems after colostomy operation due to lack of knowledge, pre-operative preparation and post operative management. So, those patients were suffering from direct and indirect complications, which may be related to colostomy itself as stenosis, prolapse, retraction, stomal necrosis, laceration, bleeding and parastomal hernia, or related to profound changes in their life: physical damage disfigurement, loss of bodily function, change in personal hygiene, restrictions in social and sexual functioning impairment (**Nicol, 2010** and **Madick, 2011**).

Aim of the Study:

This study aimed to evaluate the outcomes of educational guidelines on awareness and self - efficacy among patients with permanent colostomy. This aim was achieved through the following:

- Assessing patients' knowledge and practices as regards colostomy care.
- Detecting patients`self - efficacy for colostomy care.
- Developing and implementing the educational guidelines for the studied patients.
- Evaluating its effect on their knowledge and practices, added to self - efficacy.

Hypothesis:

It was hypothesized that, the educational guidelines had a positive effect on awareness and self - efficacy among patients with permanent colostomy.

2. Subjects and methods:

Operational definitions:

- Awareness: means patients` knowledge and practices
- Educational guidelines: means theoretical and practical sessions

Research design:

A quasi-experimental design was utilized to conduct this study

Setting:

The present study was conducted in the Outpatients Clinics at El- Demerdash Surgical Hospital and Ain Shams Specialized Hospital which is affiliated to Ain Shams University.

Subjects:

A purposive sample of (90) adult patients from both genders with colostomy, from the above mentioned settings. They were selected according to the sensitive analysis in relation to the number of patients with colostomy within the year 2012 in El - Demerdash Surgical Hospital, according to the statistical department which affiliated to the setting with the following criteria:

Inclusion criteria:

Conscious patients with permanent colostomy,they were taken post surgery after 6 months from end of the adjuvant chemotherapy, agree to participate in the study, no post-operative complications (surgical site infection, anastomotic leakage) and no critical or co - morbid conditions

Tools of data collection:

I. Patients` interviewing questionnaire (pre / post and follow-up assessment) that was designed by the researchers in light of the relevant and related literatures and written in simple Arabic language. Data obtained were related to:

- Demographic characteristics of the studied Patients which included (age, sex, marital status, educational level, Body Mass Index and causes of colostomy).
- Patients` knowledge about colostomy care included the following: purpose of stoma, stoma care, measuring stoma, changing stoma pouch, stoma irrigation, stoma products, foods causing discharge odor or gases, diet change, odor control, need for sufficient daily water intake, daily life change, religious practices, peristomal skin care, stoma complications, sexual preparations, physical activities, traveling preparations, follow – up visits and unusual signs of immediate doctor advice.

Scoring system:

Responses of the studied Patients' were scored as (1) for correct answer and (zero) for incorrect answer. The total score was categorized into either satisfactory level (from 60% and more) or unsatisfactory level (less than 60%).

II - An observation checklist (pre / post /follow – up assessment), adopted from (Kieghley, 2009, Nicol, 2010 and Potter & Perry, 2011).

It was developed and filled by the researchers to evaluate studied patients' practices in relation to colostomy care (Measuring stoma size, emptying and changing stoma pouch, stoma irrigation, peristomal skin care, hygienic and exercises measures)

Scoring system:

A correct practice was scored as (1), while the incorrect (zero). It was scored into either inadequately done (less than 70%) or adequately done (70% and more). The total score was categorized as satisfactory = 70 – 100, or unsatisfactory = less than 70.

III- Hamilton Anxiety Rating Scale (pre / post /follow – up assessment):

It was developed by Hamilton (1959) and modified by the researchers. This scale formed of thirteen variables: anxious mood, tension, insomnia,, cognitive changes, depression, somatic(sensory), cardiovascular, respiration, gastrointestinal, Genitourinary, autonomic symptoms, somatic (muscular) and the behavior at the interview. Testing reliability of the scale items using alpha cronbach test = 0.83.

Scoring system:

Responses were from (0-3) scores and the total score ranged from 0-39 according to patients' responses, the following classifications were adapted: no anxiety (zero), mild anxiety (0 - less than 23), moderate anxiety (23 - less than 29) and severe anxiety (29 - 39).

IV- Ostomy Skin Tool assessment (pre / post /follow – up assessment).

It is a measuring instrument for assessing the extent and severity of peristomal skin complications in terms of discoloration (D), erosion (E), and tissue overgrowth (T) (DET). It was categorized as follow (No = zero, mild = 1- 2, moderate = 3 - 6, sever = 7-9). It was guided by (Martins *et al.*, 2010) and completed by the researchers. It included the following items: stoma size and color, Skin irritation or rednes, peristomal infection stoma obstruction.

V – Stoma care Self - Efficacy Scale (pre / post /follow – up assessment):

It was adopted from Bekkers *et al.* (1996), and composed of 13 items that is designed to assess a general sense of perceived self efficacy with the aim in mind to predict coping with daily hassles and adaptation after experiencing all kind of stressful life

events added to difficulties of the disease. Testing reliability of the scale items using alpha cronbach test = 0.94.

Scoring system:

Patients' responses were categorized as follow: 1= not being confident at all, 2 = slightly confident, 3 = fairly confident, 4 = highly confident and 5 = extremely confident. High scores refer to positive self-efficacy, i.e., subjective presence of ability. So the total score = 100, whereas less than 50 = low (-ve) self efficacy and more than 50 = high (+ve) self efficacy.

Content validity:

It was ascertained by a group of experts from General Surgery, Medical– Surgical and Psychiatric Nursing. Their opinions were elicited regarding to the tools format layout, consistency and scoring system. Contents of the tools were tested regarding to the knowledge accuracy, relevance and competence.

Ethical considerations:

In the planning stage approval was obtained from the directors of the above mentioned setting. All patients were informed about the study and their rights according to medical research ethics that they were free to decide whether or not they would participate in the study. Then a written informed consent was obtained from each patient who agreed to participate in the study.

Pilot study:

A pilot trial was carried out on 10% of the total study sample to test the clarity and practicability of the tools, in addition to subjects and settings. Pilot subjects were later included in the study as there were no radical modifications in the study tools.

Procedure:

- Sampling and data collection were started and completed within one year.

- Purpose of the study was simply explained to the patients who agreed to participate in the study prior to any data collection.

- The researchers started to collect data from the studied patients at the Out patients' Clinics using the pre constructed tools.

- The data were collected by the researchers 2 days/week, at morning shift, through monthly follow – up visit to take the stoma supplies.

- The educational guidelines were designed based on analysis of the actual patients' needs in pre assessment by using the pre constructed tools.

- The content was written in simple Arabic language and consistent with the related literature. Moreover, met patients' needs and their level of understanding.

- The educational guidelines were presented in theoretical and practical sessions. Samples were divided into small groups including 5 – 6 patients and repeated sessions included all Patients, each group

obtained 4 sessions (2 theories and 2 practices). In addition, each patient was guided by simple written instructions, and then orientation about objectives, outline and expected outcomes was done.

- The theoretical part was conducted through lectures and group discussions, using data show and poster as a media. It was taken in 2 sessions (each session for 45 minutes) and cover the following items: Purpose and care of colostomy, daily life change, elimination, sexual preparations, traveling preparations, diet regimen, religious practices, physical activities, follow – up visits, complications and unusual signs of immediate doctor advice.

- The practical part was conducted through demonstration, re- demonstration and video. It was taken in 2 sessions (each session for one hour) and covers the following items (measuring stoma size, emptying and changing stoma pouch, stoma irrigation, peristomal skin care, hygienic and exercises measures)

- Patients were informed to be in contact with the researchers by telephone for any guidance.

- Patients were assessed either individually or in groups that entail 4-5 according to their physical and mental readiness.

- Evaluating the effect of intervention guidelines on the studied patients as regards:

- * Their knowledge and practices by using post – assessment (immediately after finishing of the guidelines sessions) and follow- up assessment (6 months later) by using the same tools.

- * Their levels of anxiety and self – efficacy added to ostomy skin condition by using post – assessment (one month after finishing of the guidelines sessions) and follow- up assessment (6 months later) by using the same tools.

Statistical Design:

The collected data were organized, categorized, tabulated and analyzed using the Statistical Package for Social Sciences (SPSS). Data were presented in tables and charts using numbers, percentages, means, standard deviations and t – test. Level of significance was threshold at 0.05.

3. Results:

Table (1): Shows studied patients' characteristics. Result revealed that half (51.1%) of them were with the age above 40 years. more than half of them were male and married (60.0 % & 77.8% respectively). In relation to the educational level, about one third (30.0%) of them were secondary school education; while 25.5% was university graduates. Concerning BMI, nearly two thirds (60.0%) of them were underweight. In relation to types of colostomy. Concerning the cause of colostomy, about two thirds of them (67.8%) were malignant tumor and the rest (32. 2%) were other causes.

Table (1) Characteristics of the studied patients (n=90)

Items	N0=90	%
Age / yrs		
≤ 40 years	44	48.9
>40 years	46	51.1
Gender		
Male	54	60.0
Female	36	40.0
Marital status		
Single	20	22.2
Married	70	77.8
BMI		
Under weight (<18.5kg)	54	60.0
Normal weight (18.5 – 25 kg)	14	15.6
Over weight (>25)	22	24.4
Education		
Illiterate	14	15.6
Primary	26	28.9
Secondary	27	30.0
University	23	25.5
Colostomy cause		
Malignant tumor	61	67.8
Other causes	29	32.2

Table (2): Clarifies patients' satisfactory knowledge about colostomy care pre/post guidelines. Results revealed significant improvement in patients' knowledge regarding post and follow - up assessment (mean percent = 71.7±6.8 & 85.0±6.6 respectively) compared to pre – assessment (23.7± 6.9), with t – test = 47.1, and 13.4 respectively), $p < 0.05$.

Table (3): Presents patients' satisfactory practices regarding colostomy care pre/post guidelines. Results revealed significant improvement in patients' knowledge regarding post and follow - up assessment (mean percent = 59.7±10.9 & 80.4±11.1 respectively) compared to pre – assessment (19.5±3.3), with t – test = 33.5, and 12.9 respectively), $p < 0.05$.

Table (4): Reveals studied patients' anxiety level pre/post guidelines. As noticed more than two thirds of them (70.0%) had severe anxiety in pre- assessment, followed by less than One fifth (15.0%) in post assessment and 2.0% only in follow – up assessment. More significant reduction in anxiety level was indicated in post and follow – up assessment, compared to pre – assessment, (t – test = 34.4 & 3.6 respectively), $p < 0.05$.

Table (5): Presents peristomal skin complications pre / post guidelines among the studied patients. Significant differences between pre and post assessment were observed with significant improvement in post and follow – up assessment with mean percent (19.0± 3.7& 10.0 ±2.9) compared with pre assessment 30. 5 ± 4.2.

Table (6): Shows mean percent of stoma care self - efficacy items pre / post guidelines among the studied patients. Results revealed statistically significant differences between pre and post assessment as regards patients` self efficacy, whereas more improvement was

noticed in post and follow – up assessment with mean percent = 46.6 ± 8.2 & 68.2 ± 9.7 respectively compared to pre assessment = 29.6 ± 8.8 . (t - test = 13.1 & 16.6 respectively), $p < 0.05$.

Table (2): Presentation of patients` satisfactory knowledge about colostomy care pre/post guidelines

Items	Patients (n=90)		
	Pre %	Post %	Follow- up %
- Purpose and complications of stoma	27.3	73.5	92.3
- Peristomal skin care	11.5	66.4	78.9
- pouch Measuring and changing stoma	31.0	65.0	85.0
- Stoma care product	32.0	75.0	80.4
- Diet change / sufficient fluid intake	22.4	67.0	72.0
-Oder / gases control	23.7	77.5	94.2
- Traveling / sexual preparations	28.3	78.2	85.6
- Elimination disturbances	17.2	75.0	90.2
- Physical activities / Exercises measures -	25.5	69.3	83.5
- Immediate doctor advice	32.0	75.0	80.4
- Follow – up visits	16.8	78.3	90.1
- Hygienic measures	16.4	56.8	85.7
- Correct clothes style -	23.7	77.5	94.2
X % ± SD	23.7± 6.9	71.7±6.8	85.0±6.6
T – value	T1 between pre & post tests = 47.1*		
	T2 between post & follow- up tests = 13.4*		

*Significant at $p < 0.05$

Table (3): Presentation of patients` satisfactory practices regarding colostomy care pre/post guidelines

Items	Patients (n=90)		
	Pre %	Post %	Follow- up %
- Measuring stoma size	17.8	57.5	86.0
- Emptying and changing stoma pouch	16.8	71.8	90.5
- Stoma irrigation	0	43.2	62.1
- Peristomal skin care	24.2	59.5	85.0
- Exercises measures	19.0	66.7	78.6
- Bathing technique /hygienic measures -	23.5	81.4	95.7
X % ± SD	19.5±3.3	59.7±10.9	80.4±11.1
T – value	T1 between pre & post tests = 33.5*		
	T2 between post & follow- up tests = 12.9*		

*Significant at $p < 0.05$

Table (4): Distribution of anxiety level pre / post guidelines among the studied patients.

Items	Patients (n=90)		
	Pre %	Post %	Follow- up %
- Mild	10.0	44.0	61.0
- Moderate	20.0	41.0	37.0
- Sever -	70.0	15.0	2.0
X% ± SD	15.0±7.1	42.5 ±2.1	49.0 ±16.9
T – value	T1 between pre & post tests = 34.4*		
	T2 between post & follow- up tests = 3.6*		

*Significant at $p < 0.05$

Table (5): Presentation of peristomal skin complications pre / post guidelines among the studied patients

Items	Patients (n=90)		
	Pre %	Post %	Follow – up %
- Discoloration	30.0	23.0	13.0
- Skin excoriation /ulcer	35.0	20.0	10.0
- Mechanical irritation	32.0	19.0	11.0
- Allergy / sensitivity	25.0	14.0	6.0
- Infection	40.0	28.0	15.0
X% ± SD	30.5 ± 4.2	19.0± 3.7	10.0 ±2.9

Table (6): Mean percent of stoma care self - efficacy items pre / post guidelines among the studied patients.

Items	Patients (n=90)		
	Pre %	Post %	Follow- up %
- Take care of stoma in the right way	32.0	48.0	75.0
- Prevent having skin problems	30.0	45.0	70.0
- Prevent having stoma bleeding / damage / or obstruction	37.0	52.0	66.0
- Follow doctor's advice for taking care of stoma and nutrition pattern	35.0	57.0	74.0
- Wear most of the like clothes	23.0	46.0	72.0
. Eat and drink most of the like things	21.0	44.0	68.0
-Make new friends and acquaintances	25.0	42.0	65.0
-Travel by train or bus	45.0	60.0	85.0
-Tell close friends about the stoma	36.0	49.0	65.0
-Tell other people about the stoma	15.0	28.0	45.0
-Go out to a restaurant, cafe, or cinema like before	20.0	40.0	73.0
-Be sexually active and have satisfaction like before	36.0	48.0	60.0
-Do physical activities like before	23.0	41.0	63.0
X % ± SD	29.6 ± 8.8	46.6± 8.2	68.2± 9.7
T – value	T1 between pre & post tests = 13.1*		
	T2 between post & follow- up tests =16.6*		

*Significant at $p < 0.05$

4. Discussion:

Patient with permanent colostomy liable to much physical and psychological complications that hinders their ability to life normally (Nicol, 2010). The current study aimed to evaluate the outcomes of educational guidelines on awareness and self - efficacy among patients with permanent colostomy. In the present study, as regards patients' characteristics, nearly half of the studied patients had the age more than 40yrs. This finding was supported by Lizarondo(2010) and Madick (2011) who reported that, colostomy occurred at age over 40 years, Therefore colostomy therapy should be targeted at older patients who require more physical and mental support in adjusting to life with a stoma. On the same context noticeable findings of the study was that more than half of the patients were male. This is supported by Baldwin *et al.*(2009) who reported that, gender of patients undergoing colostomy was male (55.6%).

Considering patients' satisfactory knowledge about colostomy care, results of this study showed significant improvement in post assessment compared to pre assessment. This finding was in agreement with Abd-Elaziz & Ibraheem (2006) and Aboufadel (2009) who mentioned that, patients should have appropriate and adequate information before surgery to enhance their life after colostomy surgery. On the same line, all of the study sample had changed their diet pattern and avoid of some favorite drinks, so they need more information about diet regimen. The previous result was supported by Fulham (2008) and Kim, *et al.* (2012) who reported that assessing patients' educational level and expectation of health care have implications for teaching. Moreover, Patients with a permanent colostomy must acquire knowledge such as wearing an appliance to collect feces for the rest of their lives and returning to the previous life activities, help to plan sufficient rest and

time to coupled with social and home activities (**Hussein & Aboelfadel, 2008 and Cox, et al., 2011**). Furthermore, **Rondelli (2009)** emphasized the importance of sexuality information because most patients had difficulties to openly discuss their sexual disabilities with their partner

In relation to patients' satisfactory practices regarding colostomy care, significant improvement was indicated in post assessment compared to pre assessment. This finding was agreed with **Potter and Perry (2011)** who recognized that all stoma patients experienced a decrease in energy and activities during the first year following their surgery. This could be due to fear of them to engage in usual activities and fear from occurrence of complications for stoma. Furthermore, inappropriate preoperative preparations and lack of knowledge regarding colostomy care. **Mohamed, et al. (2012)** found that, one third of the study sample had correct dealing with colostomy bag and less than one fifth of them had suitable clothes pattern.. Moreover, learning some skills were important such as, the ability to perform normal stoma care, identify problems, care for peristomal skin and understand how to prevent and treat potential complications **Hocevar & Gray, 2008 and Kieghley, 2009**).

Considering anxiety level among studied patients, findings indicated slight reduction in post - assessment. This result could be attributed to the fact that, majority of patients suffering from psychological problems postoperatively including (depression, poor body image, anxiety, low self-esteem and low acceptance). This could be due to feeling of guilt by patients about the impact on their family and worried about "being a burden" and loss of ability for bathing stool normally and change body image due to presence of colostomy. This finding was incongruence with **Simmons, et al. (2007 and Gapinska, et al. (2008)** who found that the prevalence of poor psychological and physical well-being and high level of depression were somewhat increase in colostomies subjects. The study result also found that; majority of patients had low self esteem and anxiety. **Adel, et al. (2008)** and **Pringle & Swan (2011)** reported that patient's mood and self-esteem were changes following colostomy surgery. In addition, psychological preparation of the individual facing a colostomy surgery should begin, as soon as surgery has been considered, preferably by utilizing the skills of a trained stoma care nurse. **Black (2011)** stated that Patients may experience a change in their role or status within their family and may be even becoming dependant. This can lead to increased stress, anxiety and depression.

As regards stoma care self-efficacy, results revealed significant improvement in post and follow –

up assessment. In accordance with the previous results, **Rafii, et al. (2013)** mentioned that, In stoma care self-efficacy subscale, the highest obtained mean score were: preventing stoma bleeding and damage, follow the stoma therapist's instructions for handling the stoma, follow the doctor's advice and the lowest mean score were: care of stoma during illness. Moreover, **Helen, et al. (2007 and Cheng, et al. (2013)** reported that, in several studies strong evidence was found for the important role of self-efficacy in the process of adapting to a stoma, stronger feelings of self-efficacy shortly after the operation predicted fewer psychosocial problems in the course of the first postoperative year. Stoma care-related self-efficacy appears especially important in the first phase after surgery.

Conclusion:

On the light of the current study results, it can be concluded that, the educational guidelines had a positive effect on improving awareness (knowledge and practices) and self - efficacy among the studied patients with permanent colostomy. Moreover, significant reduction were indicated in post and follow – up assessment regarding patients' anxiety level and peristomal skin complications.

Recommendations:

- Awareness programs should be held periodically for such group of patients.
- Patients are in need to a simplified illustrated and comprehensive Arabic booklet about colostomy.
- Teaching family members to participate in such patients' care.
- Further studies should be carried out on a large number of colostomy patients for evidence of the results and generalization.

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