



A STUDY TO ASSESS THE FUNCTION AND PATIENT'S SATISFACTION OF USING ONE PIECE AND TWO PIECE STOMA APPLIANCES AMONG CANCER PATIENTS WITH STOMA ATTENDING OPD IN A SELECTED HOSPITAL, KOLKATA.

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Abstract:

The application of one piece and two-piece bags among the patients varies in terms of convenience, effectiveness and advantages. The main purpose of the study is to compare the function and patient's satisfaction of using one piece and two piece stoma appliances among cancer patients with stoma. A true experimental cross over study design was adopted in this study. Simple random sampling technique was used to select sample. A total of 60 cancer patients with stoma were selected who attended OPD or Stoma clinic during study period. Out of 60 patients' majority 28(93.33%) in one-piece and all ostomates 30(100%) in two-piece users had mild peristomal complication. Twelve (40%) ostomates among two-piece users had poor level and majority 17(56.67%) in one piece users had moderate level of satisfaction. There is no statistical significant difference between the function and patient's satisfaction of using of one-piece and two-piece stoma appliances at 0.05 level of significance. The function of stoma appliance in cancer patients with stoma was affected due to different complication related to discoloration and erosion and have effect on level of patient's satisfaction related to its emotional impact and hurdle in usual and social activities.

Key Words: cancer patients with stoma, function of stoma appliances, patient's satisfaction of using stoma appliances, one piece and two-piece stoma appliances.

INTRODUCTION:

Stoma is a surgically created opening in the abdominal wall whether temporary or permanent, are required as a part of clinical management of certain diseases to allow elimination of urine or faeces when the urinary or gastrointestinal systems are not functioning properly. The main three primary types of ostomy surgeries are: Colostomy, ileostomy and urostomy. Ostomy appliances make it possible to collect the effluent in a bag, manage gas and noise, and maintain a healthy peristomal skin. These bags are available as one-piece or two-piece systems. The application of one piece and two-piece bags among the patients has a variety of convenience and effectiveness on the basis of advantages. In one piece bag the base which sticks on the skin, is fused to pouch. It gives a lower profile and costs less. In case of two piece bag, the base and pouch are separate. The base plate of two piece bag remains in place for several days and avoid skin stripping linked to repeated changes, while acting as a protective mechanical barrier itself. The choice between one-piece and two-piece stoma collection systems depends on multiple factors including not only patient preference but also lifestyle, availability and cost. Leakage is a big concern for individuals with stoma and has several consequences, including increased peristomal skin complications. Who experience such complications are more likely to be readmitted to hospital and have an increased length of stay in hospital after readmission. Selection of wrong type of stoma bag leads to more number of patient consultations. The choice between one piece and two-piece stoma appliances depends on multiple factors. Choosing the right one, will help to stay comfortable and maintain good lifestyle.

Conceptual framework:

This study is based on Myra Estrin Levine's Conservation model. This model believes nursing intervention is a conservation activity, with energy conservation as a fundamental concern. It guides nurses to concentrate on the importance and responses at the level of the person. The core of this conservation model is to improve person's physical and emotional wellbeing by considering the four domains of conservation. Nurses' role in conservation is to help the person with the process of "keeping together" the total person through the least amount of effort. Levine (1989) proposed following four principles of conservation:

1. The conservation of energy of the individual.
2. The conservation of the structural integrity of the individual.
3. The conservation of the personal integrity of the individual.

The conservation of the social integrity of the individual.

METHODS:

A true experimental cross over study design was adopted in this study.

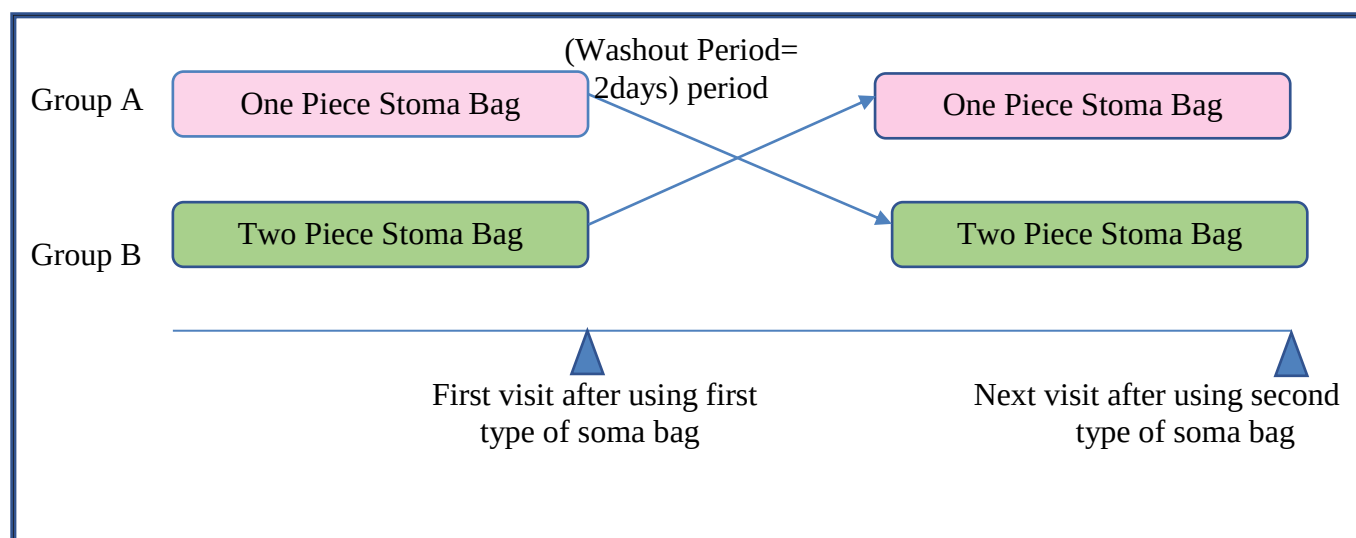
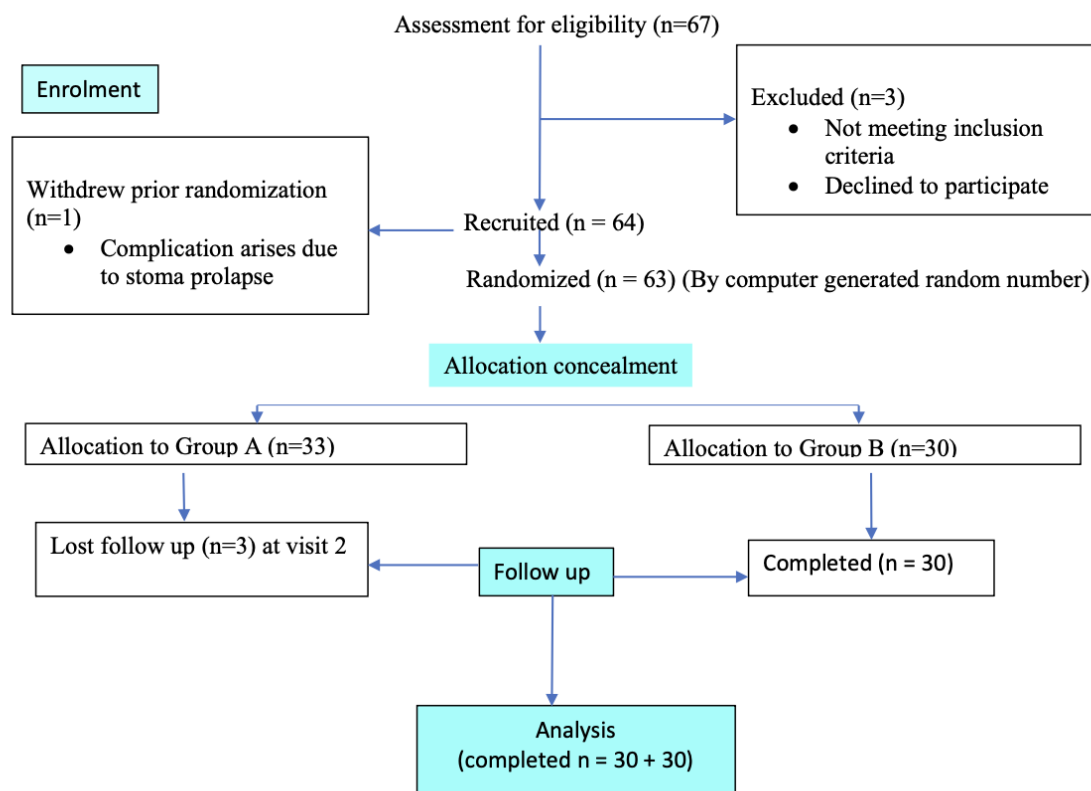


Figure 1: Crossover study design.

In present study, the sample is cancer patients with colostomy, ileostomy or urostomy attending OPD or stoma clinic at Tata Medical Center, Kolkata. 60 patients were selected for final study from those attending OPD in Tata Medical Center, Kolkata, which is a tertiary oncology Center. According to the sequence of stoma bag used the 60 patients were divided into two groups. Thirty patients in Group A (one piece followed by two-piece stoma appliance) and 30 Patients in Group B (two piece followed by one piece stoma appliance). Group A has the sequence of using one piece stoma bag first for 5+3 days and Group B used two-piece stoma bag first for 5+3 days. There was a gap period of 2 days, in these days no data were collected from patients in both groups. At crossover point, Group A was advised to use two-piece stoma bag for next 5+3 and Group B was advised for using one piece stoma bag for next 5+3 days. At last visit day, after data collection they were given the option to choose any one kind of stoma bag whichever they prefer. Sample were selected by simple random sampling technique. For this study sample were selected on certain criteria like adult patients with stoma more than 15 days attended stoma clinic for follow up, willing to participate and able to comply with study requirements, well oriented and conscious, understood and could read English/ Hindi/ Bengali. The patients who were experiencing severe stoma related complications and unable to respond to questionnaire were excluded from this study.

Data were collected by using three tools. One semi structured interview schedule was used to collect data on sociodemographic variable. Other two tools were standardizes named Ostomy skin tool for function of stoma bag by observation method and Ostomy leak impact tool (Nafees 2018) for patients satisfaction of stoma bag by pen and paper method.

Consort flow diagram:**ETHICAL CONSIDERATION:**

- The proposal was ethically accepted by the Institutional Review Board of Tata Medical Center, Kolkata on 27th of April 2023.
- The proposal was then approved by members of board of studies of the West Bengal University of Health Sciences on date 21st July, 2023.
- Informed written consent from each participant was taken before data collection procedure.

RESULTS:

Majority 18 (30%) cancer patients with stoma were with the age of 61-70 years, more than half i.e. 35(58.33%) cancer patients with stoma were female, 48(80%) were married. Majority 34(56.67%) cancer patients with stoma belongs to upper lower socioeconomic class as per Kuppaswamy Scale. 26(43.33%) cancer patients with stoma had hypertension and 10(16.67%) had Diabetes Mellitus, 32(53.33%) had colostomy and 28(46.67%) patients had ileostomy. Majority 39(65%) cancer patients with stoma had stoma for 1 to 6 months, 55(91.67%) got information for stoma care from stoma clinic, in major part 26(43.33%) cancer patients, stoma bag changed by health care worker. The mean score of function of stoma appliance is 0.52, median is 0, Standard deviation is 1.99 and 30(100%) in Group A (Two piece), Group B (One piece), and Group B (Two piece) and majority 28(93.33%) in Group A (One piece) had mild peristomal complication and only 2(6.67%) cancer patients with stoma in Group A (One piece) had moderate

peristomal complication. The mean score of Patient's satisfaction of using stoma appliance is 52.28, median is 50.5, standard deviation is 14.46. Majority 14(46.67%), 16(53.33%) 17(56.67%) of cancer patients with stoma respectively in Group A (one piece), Group A (two piece) and Group B (one piece) had moderate level of patient's satisfaction. Twelve (40%) cancer patient with stoma in Group B (two piece) had poor level of patient's satisfaction of using stoma appliances.

Table 2: Mean, standard deviation of function and patient's satisfaction of using one piece and two piece stoma appliance

	<u>Function of stoma appliance</u>				<u>Patient's satisfaction of using stoma appliance</u>			
	Mean	Standard deviation	t test	df	Mean	Standard deviation	t test	df
One piece	0.56	1.69	0.32	59	52.32	13.01	0.02	59
Two piece	0.48	1.03			52.25	13.68		

($t_{59} = 2.00$, at $p = 0.05$)

Calculated unpaired "t" test value of function of stoma bag at t_{59} was 0.32 which was less than tabulated value $t_{59} = 2.00$, at $p = 0.05$ level of significance and calculated unpaired "t" test value for patient satisfaction of stoma bag at t_{59} was 0.02 which was less than tabulated value at $t_{59} = 2.00$, at $p = 0.05$ level of significance.

There is no statistical significant difference between the function of one piece and two-piece stoma appliances among cancer patients with stoma at 0.05 level of significance.

There is no statistical significant difference between patient's satisfaction of using one piece and two-piece stoma appliances among cancer patients with stoma at 0.05 level of significance.

The calculated Chi square value for function of stoma appliance and socioeconomic class score was 6.67 which is greater than tabulated value 3.84 (df=1 at $p < 0.05$). Hence there is statistically significant association between function of stoma appliance and socioeconomic class. The calculated Chi square value for patient's satisfaction of using stoma appliance and gender and stoma bag changed by were 8.14 and 4.32 which were greater than tabulated value 3.84 (df=1 at $p < 0.05$). Hence there is statistical significant association between patient's satisfaction of using stoma appliance and gender and stoma bag changed by.

DISCUSSION:

The function of one piece bag was rated "good" by 79% of the patients by Patrick Rat et al (2018) in "Evaluation of one piece soft convex ostomy appliance: a prospective, multicentre, open label study", which is similar with this study findings like 28(93.33%) one piece users had mild peristomal complication. Another similar study results have shown by Ismail Sagap et al (2022) in Randomised controlled trial to assess and compare the performance and safety of two-piece ostomy appliances, where DET scores were similar in both groups, and both had low rates of device-related adverse events, all of which related to

peristomal skin. Virgin T et al (2023) showed no significant differences in two types of ostomates in “Evaluation the performance and perception of a stoma bag in people with colostomy or ileostomy –two randomised crossover trials. Good level of patient satisfaction and sense of security for one piece stoma bag in 85% cases (Voergaard L (2017) is nearly similar to 17(56.67%) of one piece users with moderate level of patient’s satisfaction. Similarly, no statistically significant difference was found between the pre-stoma education status, stoma type and stoma duration according to daily life activities, nutritional status, mental status, dressing and social life ($p > 0,005$). (Esma Özşaker, Tuğçe Yeşilyaprak 2018). But the same study shows no difference for gender which is in contrary with this study findings. Again, patients of female gender and young age are in the highest risk of clinically relevant reduced satisfaction (Helle Kristensen et al. 2018). Krouse et al. explored the impact of education, employment status, and annual household income and found none to correlate significantly with patient satisfaction in multivariate analysis. A survey conducted in five European countries (Netherlands, Denmark, Sweden, Spain and Portugal) determined that most ($n = 1560$, 70%) of the patients with a stoma had ≤ 10 years and 11–14 years of education. Davis et al. found that 12 (21.8%) patients had no formal education, 9 (16.4%) were primary school graduates and 25 (45.5%) were secondary school graduates. In a study conducted in Türkiye, it was determined that 53 (53%) patients with a stoma were primary school graduates, and 17 (17%) were literate. Maintenance of the peristomal skin is often challenging for patients with a stoma, and peristomal skin complications are prevalent, one study found that patients with a stoma with peristomal skin complications were more likely to be readmitted to the hospital than those without complications.

LIMITATIONS:

- The study was limited to a specific tertiary care Center of Kolkata.
- Sample size was less number.
- Standardized structured questionnaire was used hence the data collection was not in depth.
- Data was collected after using bag for only 5 days and not followed up further, in which actual data can be varied.

RECOMMENDATIONS:

- A similar study can be conducted to assess the coping strategies adopted by ostomy patients.
- A comparative study can be conducted between temporary and permanent stoma patients to assess function and patient’s satisfaction of using stoma bags.
- A follow up study can be carried out to find out changes life while dealing with daily activities.
- A longitudinal study may be undertaken to evaluate the different factors that contribute to the patient’s satisfaction of using stoma bags.

CONCLUSION:

The function of stoma appliance in cancer patients with stoma was affected due to different complication related to discoloration and erosion. Using both the types of stoma appliances have effect on level of patient’s satisfaction related to its emotional impact and hurdle in usual and social activities.

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