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Original Article

Stoma Self-care: Knowledge and Practices among Ostomates with Intestinal Stoma

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Abstract


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The objectives of the study were: (1) to assess the knowledge of ostomates regarding self-care of stoma, (2) to assess the practices of ostomates during self-care of stoma, and (3) to find out the association of knowledge of ostomates regarding self-care of stoma with selected clinical and sociodemographic variables.The study was conducted in stoma clinic of selected tertiary care hospitals, New Delhi, India using cross-sectional and descriptive study design. Two hundred and fifty subjects with intestinal stoma were recruited in the study using total enumerative sampling technique. Data were collected using self-structured questionnaire that was developed utilizing an adapted version of the "home management guidelines for stoma care." Slightly more than half of the subjects (50.4%) had good knowledge regarding self-stoma care. However, 44.8% of subjects had average knowledge regarding stoma self-care, and only 4.8% had poor knowledge regarding self-stoma care. Duration of stoma, status of stoma (whether temporary or permanent), training received regarding stoma care, and subjects linked with stoma group were statistically significant ($p < 0.05$) in predicting knowledge regarding stoma self-care. The study emphasizes on educational needs of ostomates and recommends developing strategies to meet these needs.

Keywords

- self-stoma care
- stoma self-care efficacy
- knowledge
- ostomates
- practices

Introduction

The word "stoma" has come from the Greek word which stands for mouth or opening. Stomas are being created in conditions involving the gastrointestinal tract, respiratory tract, or genitourinary tract. One well-known form of these artificial stoma is an intestinal ostomy, which is a surgically created opening in the large intestine or ileum to allow the removal of feces out of the body.[1] Intestinal ostomy is a procedure that is implemented to treat several conditions, including acute diverticulitis, rectal cancer, trauma, or inflammatory bowel disease.[2] This therapeutic approach can be temporary or permanent.[2,3] The stoma creation has impact not only on excretion pathways but also on the individual as a whole. These individuals start living a different experience after undergoing through this surgery, where their standards of living, ways of interacting with others, and rhythm of life modifies.[4] Ostomates need to master multiple new psychomotor skills such as emptying the bag, removing, and changing stoma bag, care of stoma and peristomal skin, and much more. These self-efficacy skills are linked to positive ostomy adjustment among ostomates.[5,6] Stoma clinics can assist ostomates in their stoma care; however, it is not feasible for ostomates to visit to stoma clinics lifelong

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for their routine care, thus acquiring self-efficacy is a must to enhance adjustment to changing life situations.[7] Many studies had focused on quality of life of ostomates after stoma creation; however, there is little evidence available on knowledge and practice of ostomates regarding stoma self-care efficacy needed to improve their quality of life. Thus, the current study has been performed with the objective to assess stoma self-care efficacy-related knowledge, and practices among ostomates with intestinal stoma attending stoma clinic at selected tertiary care hospital. The findings of the study can contribute to practices of stoma nurses in helping ostomates' skills regarding self-stoma care.

Materials and Methods

Study Design and Objectives

The cross-sectional and descriptive study was conducted to assess stoma self-care efficacy-related knowledge and practices among ostomates with intestinal stoma attending stoma clinic at a selected tertiary care hospital, India. The report was prepared using the Strengthening the Reporting of Observational studies in Epidemiology checklist. The objectives of the study were: (1) to assess the knowledge of ostomates regarding self-care of stoma, (2) to assess the practices of ostomates during self-care of stoma, and (3) to find out the association of knowledge of ostomates regarding self-care of stoma with selected clinical and sociodemographic variables.

Sample and Setting

The population in the current study included ostomates with intestinal stoma attending stoma clinic at selected tertiary care hospital, India over a period of 7 months (July 2022–January 2023). Eligibility criteria for inclusion included ostomates aged 18 years or older, who can read Hindi or English language, had intestinal ostomy for more than 3 months, and were willing to participate in the study. Ostomates with genitourinary ostomies, respiratory stoma and with any physical or psychological ailment, and interrupting stoma self-care were excluded from the study. Two hundred and fifty subjects with intestinal stoma were recruited in the study using total enumerative sampling technique.

Tool Measurement

The researchers developed a self-structured questionnaire utilizing an adapted version of the "home management guidelines for stoma care."[7] To establish content validity, the self-structured knowledge questionnaire was given to seven experts who had experience in the field of stoma care, stoma nursing, and palliative care to ascertain validity of the tool. Changes were made in the tool as per the suggestions from the experts. The tool was then translated to Hindi language forward and backward by two bilingual experts for the convenience of participants. The modified tool was then administered to 25 subjects who were not part of main data collection to ascertain clarity, feasibility, and practicability of the study tool. The reliability of the tool was assessed using a test–retest method. The individual item of knowledge questionnaire had I-CVI of 1 and the S-CVI of 0.892. The individual item of practice questionnaire had I-CVI of 0.964 and the S-CVI of 0.894.

Tool for Data Collection

The questionnaire was divided into three sections. Section 1 included 11 sociodemographic and clinical variables including age, gender, educational status, occupation, marital status, duration of stoma, status of stoma, type of stoma, training received on stoma care, type of stoma appliances used, and association with stoma groups. Section 2 included a self-structured tool to assess knowledge regarding stoma self-care among ostomates. The questionnaire had 20 multiple choice questions, with four response options, out of which one was correct. Section 3 included 11 open-ended questions to assess practices of ostomates regarding stoma care at their home setting.

Data Collection and Analysis

Eligible participants were provided with an information sheet containing title of the study, study objectives, methodology, their role, and their right to give consent and right to withdraw at any time from the study. Written consent to participate in the study was taken from all the study participants before collection of data. After signing consent form, they were provided with questionnaire to be filled. The investigators were available to clear any doubts wherever needed; however, no attempt was made to suggest answers to subjects. Collected data were coded, validated, and analyzed using IBM SPSS (version 21).

Ethical Considerations

The study was performed in accordance with "World Medical Association Declaration of Helsinki."[8] Ethical permission was taken from the institutional ethical committee (IEC-970/03.10.2020, RP-19/2020). Administrative permission was taken from the head of stoma clinic at selected tertiary care hospital to conduct the study.

Results

Sociodemographic Characteristics

Most (40.4%) of the subjects belonged to the age group of 41 to 50 years, and 8.4% were from the age group of 21 to 30 years; 64.8% of ostomates were males, with 35.2% being females. Majority (92.40%) of the subjects were married. Maximum (78.8%) of subjects were unemployed, and 2.8% were retired; 80.0% had permanent stoma, and 20% had temporary one. Majority (94.4%) of subjects had colostomy, and 5.6% had ileostomy as stoma. Most of them (66.3%) had received training regarding stoma care (►Table 1).

Knowledge Regarding Self-care of Stoma

Maximum score of the questionnaire for knowledge assessment was 20 and minimum was 0. Correct response for each item was scored as "1" and wrong response as "0." Knowledge score of subjects from 0 to 8 was considered poor knowledge,

Table 1 Sociodemographic and clinical profile of subjects ($N = 250$)

S. No.	Variables	*n* (%)
1	Age (y)	
	21–30	21 (8.4)
	31–40	90 (36.0)
	41–50	101 (40.4)
	51–60	38 (15.2)
2	Gender	
	Male	162 (64.8)
	Female	88 (35.2)
3	Marital status	
	Married	231 (92.4)
	Unmarried	17 (6.8)
	Widow/widower	2 (0.8)
4	Education	
	Below 10th standard	50 (20.0)
	10th standard	84 (33.6)
	12th standard	87 (34.8)
	Graduated/above	29 (11.6)
5	Occupation	
	Unemployed	197 (78.8)
	Government job	7 (2.8)
	Private job	44 (17.6)
	Retired	2 (0.8)
6	Duration of stoma (y)	
	< 1	67 (26.8)
	1–3	126 (50.4)
	3–5	49 (19.6)
	> 5	8 (3.2)
7	Status of stoma	
	Permanent	200 (80.0)
	Temporary	50 (20.0)
8	Type of stoma	
	Colostomy	236 (94.4)
	Ileostomy	14 (5.6)
9	Training regarding stoma care received	
	Yes	165 (66.3)
	No	85 (34.0)
10	Type of appliance used	
	One-piece bag	45 (18.0)
	Two-piece bag	204 (81.6)
	Stoma cap	1 (0.4)
11	Linked with stoma group	
	Yes	126 (50.4)
	No	124 (49.6)

score of 9 to 15 was termed as average knowledge, and score of 16 and above were considered as good knowledge regarding self-stoma care.

Slightly more than half of the subjects (50.4%) had good knowledge regarding self-stoma care. However, 44.8% of the subjects had average knowledge regarding stoma self-care and least (4.8%) had poor knowledge regarding self-stoma care. Majority (93.6%) of subjects knew color of healthy stoma, followed by 90.4% subjects who were aware of managing stoma bag while traveling. Knowledge regarding electrolyte imbalance management was not directly assessed in the study; however, 72.4% were aware of fact that they need to contact immediate health care worker in case of diarrhea, loss of appetite, stomach cramps, increased weakness and fatigue, and gassy or bloated abdomen, which are symptoms of electrolyte imbalance; 86.8% of the subjects were able to identify healthy eating habits with stoma; 83.6% of subjects selected right activities that can be performed safely with stoma; 70% of the subjects were aware of purpose of ostomy irrigation and 68.4% of the subjects were aware of right technique of performing ostomy irrigation. However, only 29.2% were able to describe normal protrusion of stoma from skin and only 12% of subjects were aware of duration to keep stoma cap. Knowledge regarding prevention of skin problems related to stoma was exhibited by only 37.2% of the subjects (►**Table 2**).

The association of knowledge regarding stoma self-care with selected sociodemographic was found to be nonsignificant ($p < 0.05$). The results of regression analysis have shown that duration of stoma, status of stoma (whether temporary or permanent), training received regarding stoma care, and subjects linked with stoma group were statistically significant ($p < 0.05$) in predicting knowledge regarding self-stoma care (►**Table 3**).

Practices during Self-stoma Care

Total 43.2% of subjects reported to clean stoma from periphery to center and least (0.8%) cleaned stoma side by side in their routine practice. Maximum (56%) reported to empty bag when one-third filled; however, 7.6% wait to get it fill completely before emptying. Maximum (65.6%) of the subjects reported changing their bag on weekly basis; however, least (2.4%) reported to change it daily and twice daily, respectively. More than one-third of the subjects (38.4%) reported to either empty or change bag to prevent odor from stoma. Majority (87.6%) revealed that they empty bag before going to sleep to prevent leakage. Maximum (39.6%) subjects use waterproof pouches while bathing; however, least (6.8%) use bath aprons. The majority (96.8%) carried extra supply of stoma care while traveling. Almost half (54.8%) cleaned stoma with normal saline. Slightly more than half (57.2%) of the subjects increased their fluid intake to manage constipation, 14.8% of them took medical help, 4.8% of the subjects reported to use stool softener, and 23.3% of the subjects reported to use all of the above-mentioned measures to manage the constipation. Majority (67.2%) of the subjects reported to avoid food items that cause them diarrhea, 13.2% reported to seek for medical help in case of

Table 2 Item analysis of knowledge of ostomates regarding self-stoma care ($N = 250$)

S. No.	Knowledge items	Right response, *n* (%)
1	Color of the healthy stoma	234 (93.6)
2	Appearance of healthy stoma	222 (88.8)
3	Normal protrusion of stoma from skin	73 (29.2)
4	Duration of changing stoma bag	163 (65.2)
5	Size of normal stoma	127 (50.8)
6	Duration of keeping the stoma cap	30 (12.0)
7	Technique of cleaning of stoma	120 (48.0)
8	Duration of putting stoma bag after bathing	198 (79.2)
9	Contacting health care worker	181 (72.4)
10	Purpose of stoma irrigation	175 (70.0)
11	Technique of stoma irrigation	171 (68.4)
12	Technique to use stoma bag covers	196 (78.4)
13	Ways to improve appearance during sexual activity	113 (45.2)
14	Safe exercise with ostomy	201 (80.4)
15	Activities that can be performed safely with stoma	209 (83.6)
16	Food that can cause bloating	178 (71.2)
17	Management of constipation	188 (75.2)
18	Prevention of skin problems	93 (37.2)
19	Prevention of peristomal skin conditions	204 (81.6)
20	Managing stoma bag while traveling	226 (90.4)
21	Healthy eating habits with stoma	217 (86.8)

Table 3 Predictors of knowledge in the linear regression **($N = 250$)**

Variables	Coefficient	Standard. error	*T*	$P > \|t\|$	95% confidence interval
Duration of stoma	0.5297744	0.2788734	1.90	0.049	−0.0195547 to 1.079103
Status of stoma	−1.070322	0.5267908	−2.03	0.043	−2.108003 to −0.0326415
Type of stoma	0.1764462	0.8163898	0.22	0.829	−1.431691 to 1.784583
Training received	1.983386	0.4625299	4.29	0.000	1.072288–2.894485
Type of stoma appliance	0.3489016	0.4892499	0.71	0.476	−0.6148303 to 1.312633
Linked with stoma group	11.85871	2.781035	4.26	0.000	6.380582–17.33683

diarrhea, 5.6% reported to use over-the-counter drugs to manage diarrhea; however, 14% reported to use all of the above-mentioned measures to manage the diarrhea; 53.2% of the subjects visited stoma clinic whenever needed (►Table 4).

Discussion

The current study aimed at assessing stoma self-care knowledge and practices among ostomates with intestinal stoma attending stoma clinic at selected tertiary care hospital. The sociodemographic findings of the study showed that majority (64.8%) of the subjects were male which are consistent with the findings of Beitz (2004),[9] who found more incidence of colorectal cancer in males. Majority (80.0%) of the subjects had permanent stoma and 20% had temporary one. Majority (94.4%) of the subjects had colostomy and 5.6% had ileostomy as stoma. The results revealed that only half of subjects (50.4%) had good knowledge regarding stoma self-care. The findings are consistent with Mohamed and Seham's[10] findings which revealed high percentage of adolescents and adults with stoma had fair and poor knowledge regarding self-stoma care. Majority (93.6%) subjects knew color of healthy stoma, followed by 90.4% subjects who were aware of managing stoma bag while traveling; 86.8% subject were able to identify healthy eating habits with stoma; 83.6% subjects selected right activities that can be performed safely with stoma. These findings may be because maximum

Table 4 Self-stoma care practices among ostomates ($N = 250$)

S. No.	Items	Practices	*n* (%)
1	How do you clean your stoma?	A. Periphery to center	108 (43.2)
		B. Center to periphery	67 (26.8)
		C. Dap all over	33 (13.2)
		D. Clean all together	41 (16.4)
		E. Side by side	2 (0.8)
2	When do you empty the stoma pouch?	A. Totally filled	19 (7.6)
		B. Half filled	85 (34.0)
		C. One-third filled	140 (56.0)
		D. Two-thirds filled	3 (1.2)
		E. As needed	3 (1.2)
3	How frequently do you change your bag?	A. Every third day	19 (7.6)
		B. Weekly	164 (65.6)
		C. Every 15 d	16 (6.4)
		D. Daily	6 (2.4)
		E. Twice a day	6 (2.4)
4	How do you prevent odor from stoma?	A. Change diet intake	56 (22.4)
		B. Use of deodorant	79 (31.6)
		C. Increase fluid intake	19 (7.6)
		D. Either empty or change the bag	96 (38.4)
5	What do you do to prevent leakage from the bag?	A. Reducing the size of aperture of flange	5 (2.0)
		B. Use two-piece pouch	47 (18.8)
		C. Check adhesive pad for proper seal	179 (71.6)
		D. Others	19 (7.6)
6	What precaution do you take before going to bed to avoid leakage?	A. Emptying pouch	219 (87.6)
		B. Avoid eating just before going to bed	11 (4.4)
		C. Secure stoma bag	13 (5.2)
		D. Use stoma belt	7 (2.8)
7	How do you bath with stoma?	A. Leave the stoma bag as it is	86 (34.4)
		B. Use waterproof pouches	99 (39.6)
		C. Take off the bag before bathing	48 (19.2)
		D. Use bath apron	17 (6.8)
8	How do you manage a stoma bag while traveling?	A. Use large size bag	2 (0.8)
		B. Carry extra stoma bag with supplies	242 (96.8)
		C. Avoid food that cause excessive gas	2 (0.8)
		D. Avoid traveling	4 (1.6)
9	How do you care skin around your stoma?	A. Cleaning with normal saline and dry	137 (54.8)
		B. Cleaning with antiseptic solutions	33 (13.2)
		C. Clean with soap and water	70 (28.0)
		D. Clean with povidone iodine	10 (4.0)
10	How do you manage constipation?	A. Increase of fluid intake	143 (57.2)
		B. Use of stool softeners	12 (4.8)
		C. Take medical help	37 (14.8)
		D. All of the above	58 (23.2)

(*Continued*)

Table 4 (*Continued*)

S. No.	Items	Practices	*n* (%)
11	How do you manage diarrhea?	A. Avoid food items that cause them diarrhea	168 (67.2)
		B. Use over-the-counter drugs to manage diarrhea	33 (13.2)
		C. Seek for medical help	14 (5.6)
		D. All of the above	35 (14.0)
12	How frequently are you visiting stoma clinics?	A. Once a week	32 (12.8)
		B. Twice a week	34 (13.6)
		C. Twice a month	24 (9.6)
		D. As and/or when required	133 (53.2)
		E. Others	27 (10.8)

(66.3%) of the subjects had received training regarding stoma care. However, knowledge regarding technique of cleaning of stoma, duration to keep stoma cap, ways to improve appearance during sexual activity, and ways to prevent skin problems was lacking in ostomates, emphasizing need of education on these areas.

Research Strengths

The study used total enumerative sampling, which ensures maximum statistical coverage and reduced risk of guesswork. Tools with high reliability were used to assess knowledge and practices regarding stoma self-care to ensure overall consistency of study's results.

Research Limitations

As the study used self-reported questionnaire, data were dependent on honesty and recall ability of the participants, thus the results are subjected to recall bias.

Research Implications

The findings of the study can be utilized for preparing training programs for ostomates to improve their self-care efficacy.

Conclusion

The current study found unsatisfactory level of knowledge regarding the self-stoma care in almost half of the subjects. This in turn can have great impact on quality of life of these subjects. Thus, the study recommends individualized training ostomates regarding stoma self-care to improve their practices and overall improvement of outcome and quality of life. The study emphasizes on educational needs of ostomates and recommends developing strategies to meet them.

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None.

Conflict of Interest

None declared.

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