Impact of Stoma Care Education in Minimizing the Incidence of Stoma Skin Complications

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Objective: To evaluate a structured patient education program on minimizing skin complications in ostomy patients.

Design: A Randomized Controlled Trial.

Setting: Surgical Ward and Outpatient Clinic, Prince Sultan Military Medical City, Kingdom of Saudi Arabia.

Method: One hundred adult stoma patients, divided into two groups (study and control, fifty each) were included in the study from October 2014 and completed in April 2015. A designed stoma care educational program was given to study group before discharge. Peristomal skin area was assessed after hospital discharge one week, three weeks and six weeks, for the study and control group.

Result: The study found a significant decrease in peristomal skin complications in the study group (P-value .028) and significant increase of stoma skin complications in the control group (P-value .000). Highly statistically significant difference between the study and control group of skin assessment around the stoma of patients six weeks postoperatively (P-value .028).

Conclusion: Complications of stoma could be due to the lack of knowledge of stoma-care. Patients with stoma who attended the structured patient education program have less peristomal skin complications compared to those who did not attend. Educational program aimed to increase the knowledge of stoma-care is recommended.

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The stoma is an abnormal artificial opening in the human body that binds the hollow space of the patient with the outside world. Creation of stoma is considered as treatment method of colorectal cancer and several intestinal disorders[1]. The number of individuals with an ostomy is estimated to increase by 3% to 4% per year. Patients might live with stoma either temporarily or permanently. As a result of cancer, some of the patients would live with a colostomy for the rest of their lives. Stoma complications could be necrosis, leakage granuloma formation, retraction, stenosis, prolapse, parastomal hernia and peristomal skin disease[2]. Reduced complications of stoma would lead to a better quality of life. The most common skin complications are rash, ulceration or irritation[3]. According to Meisner et al, it could be ascertained that globally, approximately 73% of the patients are facing stoma skin complications[2]. Nursing plays an imperative role in providing essential care to the individuals, families and community members[4].

The aim of this study is to evaluate the impact of stoma care education in minimizing stoma-related complications.

METHOD

The study began in October 2014 and completed in April 2015. One hundred patients above 18 years and scheduled for undergoing elective colorectal surgery that would require formation of a stoma were included in the study. Patients with poor consciousness, mental disorders, and skin disease were excluded. One hundred patients participated in this study (50 study and 50 control group); the samples in both groups were randomly selected through lottery method using a hat with a number for each patient on a piece of paper. The even number in selection located in the study group and the odd number in selection located the control group.

Personal characteristics of patients were documented during admission before performing stoma.

The Studio Alterazioni Cutanee Stomali (SACS) is a clinical instrument for objective assessment and classification of peristomal skin lesions was used after discharge from hospital

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one week, three weeks and six weeks to detect the extent and severity of skin complications[5]. Pre-test was collected from the study group before implemented education program to evaluate their knowledge about stoma and its care after admission. An implemented educational program was given to the study group after stoma formation. After receiving education program, a post-test was collected from the study group. All participating patients signed a written informed consent.

Data was coded for entry and analyzed using SPSS version 18. Independent t-test was used to compare between the study and the control group. Paired t-test was used to compare the pre and post-test of the study group for interval and ratio data and Chi-square was used for nominal and ordinal data.

RESULT

One hundred patients divided into two groups (study and control, fifty each) were included over a six-month study period. The mean age was 46.14 in the study group and 55 in the control group (range 18-65) years. Seventy-one (71%) had colostomies, and 29 (29%) had ileostomies. The most common diagnosis was cancer. The type of operation and stoma performed are shown in table 1.

Table 1: Personal Characteristics of Experimental and Control Group

Variables	Study Group		Control Group			P-value
	n=50	n%	n=50	n%		
Age						
30 and under	10	20%	1	2%		
31-40	8	16%	2	4%		
41-50	6	12%	8	16%		
51-60	18	36%	25	50%	**T** -3.84	0.000
More than 60	8	16%	14	28%		
Total	**50**	**100%**	**50**	**100%**		
Mean	46.14		55.06			
SD	14.18		8.27			
Type of Stoma						
Colostomy	38	76%	33	66%	X^2 1.214[a]	.378
Ileostomy	12	24%	17	34%		
Total	**50**	**100%**	**50**	**100%**		
Diagnosis						
Cancer	26	52%	34	68%		
Gastrointestinal Disease	20	40%	14	28%	X^2 .044[a]	0.188
Others	4	8%	2	4%		
Total	**50**	**100%**	**50**	**100%**		

Table 2 shows the correlation between education, total pre-knowledge score, and total post knowledge score of the study group. Education has a strong correlation with post-test, P-value 007 compared to pre-test, P-value 0.714.

Table 2: Age, Education, Pre-Knowledge Score and Post Knowledge Score

Variables	Age	Education	Total Pre-test Score	Total Post-test Score
Age				
Pearson Correlation		-.769**	-.283**	-.458*
Sig. (2-tailed)	1	.000	.047	.001
Education				
Correlation			.053	.374**
Sig. (2-tailed)		1	.714	.007
Total Pre-test Score				
Pearson Correlation	*		1	.224
Sig. (2-tailed)				.119
Total Post-test Score				
Pearson Correlation				1
Sig. (2-tailed)				

Fifty patients (50%) were seen preoperatively by the researcher (study group). One hundred patients (100%) were seen postoperatively by the researcher (study and control group). Postoperative stoma related skin complications are shown in table 3. In week one postoperative, 39 (78%) patients in the control group developed hyperemic lesion compared to 1 (2%) patient in the study group (P-value < 0.005). In week three postoperative, hyperemic lesion occurred in 23 (46%), and Erosive lesion occurred in 25 (50%) patients in the control group compared to the study group, 6 (12%) (P-value < 0.005). In week six postoperative, 15 (30%) patients in the control group developed hyperemic lesions around the stoma and while only 1 (2.0%) in the study group. Erosive lesions developed in 24 (48%) among patients in the control group and none in the study group. Nine (18%) ulcerative lesions were seen in the control group and none in the study group (P-value < 0.005).

Table 3: Week One, Week Three and Week Six Peristomal Skin Assessment

Stoma Assessment	Week 1		Week 3		Week 6		X^2	P
	Study Group	Control Group	Study Group	Control Group	Study Group	Control Group		
Intact	49 (98%)	10 (20%)	44 (88%)	2 (4%)	49 (98%)	2 (4%)		
Hyperemic Lesion	4 (2%)	39 (78%)	6 (12%)	23 (46%)	4 (2%)	15 (30%)	**Study Group** 7.143	**Study Group** .000
Erosive Lesion	0 (0%)	4 (2%)	0 (0%)	13 (50%)	0 (0%)	24 (48%)	**Control Group** 55.985	**Control Group** .028
Ulcerative Lesion	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (18%)		

DISCUSSION

Patients with stomas could develop physical and/or psychological complications[6]. Several studies revealed that ostomy patients were facing several problems after stoma

creation due to lack of knowledge, pre-operative preparation and postoperative management. Seventy three percent of ostomy patients complain of skin problems. Stoma skin complications could be due to lack of knowledge about stoma care[7]. Peristomal skin problems may be caused by touching the peristomal skin which results in skin irritation[8]. Most patients who developed peristomal skin complications have unskilled caregivers and family[5].

Stoma education is effective to attain proficiency in managing stoma and reducing stoma complications. Early intervention of patients for stoma care management promotes a better quality of life and reduces complications[9]. Chaudhri et al reported that stoma formation might be associated with significant morbidity that could be reduced with preoperative and postoperative education[10]. Borwell said that education should aim to change the way that patients think, feel and behave towards their newly formed stoma and should actively help in rehabilitation[11].

Patients undergoing stoma creation may develop psychosocial issues, relationship concerns and fear of leakage. Ferlay et al found that most of the stoma performed were due to cancerous growth within the digestive system, specifically the ileum and colon[12]. Education would provide competence and confidence of self-care which could minimize the complications and improve the quality of life[13]. The effectiveness of a multimedia program aimed at improving stoma knowledge, self-care and overall behavior was assessed in a study. The study found improved overall self-care knowledge, attitudes and behavior. Fewer cases of stoma complications such as skin infections were noted[14]. Patient education is essential in maintaining the skin around the stoma infection free. The ostomates have little time to become proficient with their stoma care. Patients who do not get proper educational support regarding the proper care of stoma are at high risk of developing hyperemic (L1) or erosive (L2) lesions[15].

CONCLUSION

This study proves the effectiveness of stoma care education in minimizing surrounding skin complications among ostomy patients. It could be affirmed that adequate education of stoma care, as well as proper nursing care had a positive impact in minimizing the complications of the stoma.

Nursing research in ostomy care should be expanded to provide best care to ostomy patients. Further large randomized controlled trial is needed to demonstrate the best practices related to provision of care to patients with an ostomy.

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REFERENCE

1. Thamilselvam P, Khairuzi S, Fadzli I. Quality of Life after Colostomy. Reviews of Progress 2013; 1(19):1-8.
2. Meisner S. Lehur PA. Moran B., et al. Peristomal Skin Complications are Common, Expensive and Difficult to Manage: A Population-Based Cost Modeling Study. PLoS One 2012; 7(5):e37813.
3. Doran M. Common Skin and Stoma Problems. Irish Stoma Care and Colorectal Nurses Study Day 2011; 1-23.
4. Hassmiller S. Nursing's Role in Healthcare Reform. American Nurse Today 2010; 5(19):68-9.
5. Beitz J, Gerlach M, Ginsburg P, et al. Content Validation of a Standardized Algorithm for Ostomy Care. Ostomy Wound Manage 2010; 56(10):22-38.
6. Sprangers MA, Taal BG, Aaronson NK, et al. Quality of Life in Colorectal Cancer. Stoma vs. Nonstoma Patients. Dis Colon Rectum 1995; 38(4)361-9.
7. Burch J. Management of Stoma Complications. Nurs Times 2011; 107(45):17-8, 20.
8. Burch J, Clinical Care: Management of peristomal skin complications. British Journal of Healthcare Management 2014; 20(6):264-9.
9. Jordan R, Christian M. Understanding Peristomal Skin Complications. Wound Care Advisor 2013; 2(3):36-41.
10. Chaudhri S, Brown L, Hassan I, et al. Preoperative Intensive, Community-Based vs. Traditional Stoma Education: A Randomized, Controlled Trial. Dis Colon Rectum 2005; 48(3):504-9.
11. Borwell B. Continuity of Care for the Stoma Patient: Psychological Considerations. Br J Community Nurs 2009; 14(8):326, 328, 330-1.
12. Ferlay J, Autier P, Boniol M, et al. Estimates of the Cancer Incidence and Mortality in Europe in 2006. Ann Oncol 2007; 18(3):581-92.
13. Bastable SB. Essentials of Patient Education. USA: Jones and Bartlett Learning, 2006: 287.
14. Lo SF, Wang YT, Wu LY, et al. Multimedia Education Programme for Patients with a Stoma: Effectiveness Evaluation. J Adv Nurs. 2011; 67(1):68-76.
15. Scott V, Raasch D, Kennedy G, et al. Prospective Assessment and Classification of Stoma Related Skin Disorders. Poster presented at: 41st Annual Wound Ostomy and Continence Nurses Society Conference. ConvaTec Inc 2009; 1-2.