OPEN

North America Wound, Ostomy, and Continence and Enterostomal Therapy Nurses Current Ostomy Care Practice Related to Peristomal Skin Issues

Janice C. Colwell ◆ Laurie McNichol ◆ Joy Boarini

ABSTRACT

PURPOSE: The purpose of this study was to describe the practice of 796 ostomy nurses in North America in 2014 related to peristomal skin issues.

DESIGN: Descriptive study.

SUBJECTS AND SETTING: Participants were 796 wound, ostomy, and continence (WOC) and enterostomal therapy (ET) nurses currently practicing in the United States or Canada and caring for patients with ostomies. The collection of data occurred in conjunction with an educational program on peristomal skin complications and practice issues and solicited the participant's perception on the incidence and frequency of peristomal skin issues as well as on practice patterns.

METHODS: Participants attended an educational program. They were also asked to anonymously respond to multiple-choice questions on ostomy care management via an audience response system followed by discussion of each item and their responses. This descriptive study reports on the answers to the questions as well as the pertinent discussion points.

RESULTS: Participants estimated that approximately 77.70% of their patients developed peristomal skin issues. The most commonly encountered problem was irritant contact dermatitis (peristomal moisture-associated skin damage). Contributing factors were inappropriate use of a pouching system owing to lack of follow-up after hospital discharge. Reported interventions for the prevention and management of peristomal skin issues included preoperative stoma site marking, use of a convex pouching system, and barrier rings. However, subsequent discussion revealed that the frequency of use of these products varied considerably. Participants identified shortened hospital stays, absence of preoperative stoma marking, and limited outpatient follow-up as contributing to development of peristomal skin problems.

CONCLUSION: WOC and ET nurses estimate that more than three-quarters of persons living with an ostomy develop peristomal skin problems. Multiple interventions for managing these problems were identified, but some variability in management approaches emerged.

KEYWORDS: Colostomy, Convexity, Ileostomy, Irrigation, Irritant contact dermatitis, Liquid skin barrier, Ostomy, Peristomal skin complications, Skin barrier paste, Skin barrier rings, Stoma marking, Urostomy

INTRODUCTION

Peristomal skin issues are a major problem for the person with a stoma, and reported incidence rates are as high as 75%.¹ Peristomal skin issues cause discomfort and often pain

in the area directly around the stoma and difficulty maintaining the seal on their pouching system.² This results in a loss of confidence in their ability to live with a stoma and return to their normal activities.³ In a study of 220 patients assessed at 2 months following surgery, 16% presented with complications, 69% with peristomal moisture-associated skin damages, 20% with mechanical injury, and 9% with candida infections.⁴ Herlufsen and colleagues⁵ reported on patients with a permanent ostomy and found that peristomal skin disorders ranged from 35% to 57% (dependent upon the type of stoma), but only 38% of those with a skin disorder knew they had a problem and 80% did not seek professional help. A 2007 study by Richbourg and associates⁶ surveyed patients within 2.5 years after surgery; they reported that 76% reported peristomal skin irritation, 62% reported pouch leakage, and 54% noted a reduction in previously enjoyed activities. More than half of the respondents (53%) reported depression and anxiety.

Readmission data, used as a quality indicator in the acute care and home care settings, suggest that patients undergoing surgery with a stoma are 3 times more likely to be readmitted

Janice C. Colwell, RN, MS, CWOCN, FAAN, University of Chicago Medicine, Chicago, Illinois.

Laurie McNichol, MSN, RN, GNP, CWOCN, CWON-AP, FAAN, Cone Health, Wesley Long Hospital, Greensboro, North Carolina.

Joy Boarini, MSN, WOC Nurse, (retired). At the time this article was written she was the Director of Global Clinical Education for Hollister Incorporated. Global Clinical Education, Hollister Incorporated, Libertyville, Illinois.

The educational presentations reported on in this article were funded by Hollister Incorporated.

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Correspondence: Janice C. Colwell, RN, MS, CWOCN, FAAN, 1335 S. Prairie Ave, #1507, Chicago, IL 60605 (janice.colwell@uchospitals.edu).

DOI: 10.1097/WON.0000000000000324

TABLE 1.
Educational Content Outline

I. Global Impact of Peristomal Skin Complications
II. Current Practice Improvements
III. Literature Review: Peristomal Skin Complications
IV. Assessment
A. Patient
B. Stoma
C. Peristomal skin
V. Framework for Peristomal Skin Complication Management
A. Determine and correct etiology

within 30 days of surgery as compared to patients undergoing bowel surgery within creation of an ostomy.⁷

Clearly, issues of stoma management including prevention of peristomal skin problems should be a priority when caring for persons with an ostomy. The aim of this descriptive study was to describe the practice of ostomy nurses in North America related to peristomal skin issues. We evaluated their responses to forced-choice questions related to peristomal skin issues and documented group discussion.

METHODS

Wound, ostomy, and continence (WOC) and enterostomal therapy (ET) nurses currently practicing in the United States or Canada and caring for patients with ostomies were invited to participate in the study. Presentations were held in 55 cities in the Northeastern, Southeastern, Midwestern, Western, and South Central United States and in 8 Canadian provinces. Study procedures were reviewed by the Asentral Inc institutional review board who determined that project did not require individual consent or further institutional review board oversight.

Eight certified specialty nurses with extensive experience in the management of patients with ostomies reviewed the literature and designed a 1-hour didactic presentation on peristomal skin issues. See Table 1 for education content outline. They also developed 19 forced-choice items designed to describe WOC and ET nurses' perceptions of the frequency of peristomal skin problems among persons with ostomies, and strategies for management of these issues. Faculty comprised 8 expert WOC/ET nurses in current practice.

Participants were asked to consider their current practice when responding to forced-choice questions and subsequent discussion. Responses to multiple-choice items were recorded via an electronic audience response system (ARS) that allowed anonymous responses. A single item was posed initially that did not focus on peristomal skin issues; it was included to orient participants to use of the technology, and a second item was posed requesting the respondent's permission to use aggregated data collected in a publication; all participants agreed to participate in data collection. In addition, the ARS was used to collect data on years of experience as a nurse caring for patients with ostomies, primary site of practice, and practice-related issues. The remainder of practice-related issues. One question suffered from poor interpretation and was excluded. The results of 14 questions are reported.

Study Procedures

The 8 nurses who designed the educational program and questions collected data at each site. These individuals also facilitated

TABLE 2.
Subject Demographics

Variable	n (%)
Experience as a WOC/ET nurse, y	
<5	241 (32.60)
5-10	204 (27.60)
11-15	94 (12.70)
≥16	200 (27.10)
Primary practice setting	
Acute care	541 (71.40)
Home care	91 (12.00)
Outpatient	91 (12.00)
Extended care/rehabilitation	16 (2.10)
Education	2 (0.30)
Other	17 (2.20)

group discussion held after each question was answered; the qualitative narrative was recorded and transcribed. Descriptive analysis was used to clarify responses for each forced-choice question.

Data Analysis

Audiences responded to questions using an electronic audience response card system (TurningPoint, Turning Technologies, LLC, Youngstown, Ohio). This system provided a visual display of the audience responses using simple graphs or tables within minutes after the respondents answer each question. At the conclusion of each event, the result for audience polls was stored electronically. Following the completion of all events, the authors summed the results of all events using Excel software (Microsoft Excel, 2010 version, Richmond, Washington) and used descriptive statistics to describe the overall results in numbers and percentages of responses.

RESULTS

Seven hundred ninety-six WOC/ET nurses practicing in North America participated in the educational programs; not all participants chose to respond to each question. The 3 largest practice settings of the participants were acute care (n = 541, 71.4%), home care (n = 91, 12%), and outpatient care (n = 91, 12%). More than half (60%) of participants had 10 or fewer years of experience and 27% had more than 15 years of experience caring for persons with ostomies (Table 2).

Peristomal Skin Problems

Five hundred eighty-nine (77.70%) nurses indicated that between 26% and 100% of the patients in their practice developed some type of peristomal skin problem during the time they had their ostomy. Peristomal moisture-associated skin damage (irritant dermatitis) was the most common (n = 651, 86.20%) peristomal skin problem reported. Narrative comments provided an understanding of the issues that the nurses felt contributed to the development of peristomal skin issues. Many indicated that comparatively short inpatient stays afforded little time for their patients to acquire necessary self-management skills. They further stated that a lack of follow-up due to few outpatient stoma clinics rendered it

difficult to determine whether persons with a new ostomy mastered these skills. Those with stoma clinics noted peristomal dermatitis occurred frequently; they attributed the high incidence to the patient's inability to correctly fit the healing stoma with a proper pouching system. The increase in the number of obese patients undergoing stoma surgery was noted, resulting in stomas characterized by retraction or creasing. These characteristics also contributed to challenges fitting the stoma to a proper pouching system with subsequent irritant dermatitis. When asked about the perceived incidence of skin stripping, 623 (83.70%) participants estimated that skin stripping occurred in 0% to 25% of their patients; these occurrences were attributed to excessive use of tape in an attempt to ensure a secure seal. Several participants described patients with blisters occurring directly after surgery; they attributed these occurrences to postoperative edema. All respondents concurred that gentle adhesive removal would decrease the incidence of medical adhesive-related skin injury. Five hundred eighty-three participants (83.10%) stated that hypersensitivity to tape occurred in relatively few of their patients with ostomies (0%-25%), and subsequent discussion indicated that most attributed hypersensitivity responses to use of adhesive additives such as benzoin.

Topical management of denuded peristomal skin was treated by the majority of respondents using skin barrier powder and liquid barrier wipe in layers, $n = 599$ (81.40%). They chose to manage denuded skin with a skin barrier powder because it dries the denuded area to help provide a seal; a liquid skin barrier was applied to seal the powder to the skin. This method of powder/liquid skin barrier with layers was referred to as "crusting." The frequency of the use of the crusting method was found to be regional; some respondents indicated they were taught the method in their ostomy educational programs, but others stated this method was not taught in their program.

Convexity

Three hundred fifty-two (46.80%) respondents reported that 26% to 50% of their patients required convexity. However, 444 respondents (60.60%) indicated they avoided use of these products during the immediate postoperative period. WOC and ET nurses who were comfortable with its use in the immediate postoperative period stated they used convexity in patients with poor protrusion such as individuals with temporary loop stomas or in obese patients with retraction or soft, flaccid peristomal contours. WOC and ET nurses who avoided convexity indicated concern that its use after surgery could cause mucocutaneous separation of the ostomy from the skin of the abdominal wall. Nurses who felt comfortable with it stated they felt less worried about damaging the mucocutaneous junction following introduction of products that employ soft or flexible convexity features. They further opined that the likelihood of developing mucocutaneous junction separation was low whereas the inability to get a consistent seal was high and overrode the small risk of mucocutaneous separation. Both participants and faculty noted absence of research-based evidence concerning the risk of mucocutaneous separation in the immediate postoperative period associated with use of convexity. In addition, both those who did and did not employ convexity during this period agreed protection of the peristomal skin from leakage and exposure to stomal effluent is a priority.

Cleansing the Peristomal Skin and Use of Accessory Products

The majority of participants (604, 79.70%) instructed their patients to use only water to routinely cleanse the peristomal skin. They indicated that they counseled patients to avoid routine use of soap because it leaves a residue on the skin that can interfere with the pouch seal. This risk is especially high in soaps containing emollients or other moisturizing products. Three hundred five (40.60%) nurses advocated use of skin barrier rings to achieve maximum wear time in selected patients (0%-25%). Participants discussed use of skin barrier paste versus barrier rings, and they noted that the paste can be more difficult for some people to use and can cause stinging on denuded peristomal skin. In some instance, the participants noted that the use of a skin barrier ring can improve the pouching system seal and protect peristomal skin. When asked what percentages of your ostomy patients routinely use a liquid skin barrier (wipe or spray), 386 (52.60%) used it less than 25% of the time in their practice. Discussion also revealed that some patients used the liquid skin barrier because they believed it improved the pouch seal. Other respondents noted that some patients found that their product supplier sends them this type of product and they use it because they believe it was given to them to help the pouch adhere. Most reported that they did not use liquid skin barriers because some manufacturers of ostomy products have suggested that these barriers interfere with the seal.

Trends in Ostomy Specialty Practice

Participants were asked a series of questions that explored trends observed in their professional practice. When asked, "have you seen an increase in the number of your ostomy patients being readmitted," 441 (61.50%) indicated they had not observed such a trend and 276 (38.50%) indicated they were seeing more patients with ostomies requiring hospital readmission. Participants who indicated observing more readmission indicated that the most common reason for readmission was dehydration and/or electrolyte imbalance in patients with high-output stomas such as those with ileal pouch anal anastomosis. They also commented on an increase in emergency department visits because of leakage and a lack of access to a WOC or ET nurses in the ambulatory care setting.

A minority of respondents ($n = 97$, 13.40%) indicated that they routinely teach patients with colostomies to perform colostomy irrigation. Multiple participants indicated that they do not teach irrigation because it is not feasible to teach this procedure in the acute care setting; they also observed the paucity of outpatient stoma care clinics needed to provide this education. Others felt a reluctance to teach irrigation because of the lack of familiarity with this management technique.

The participants reported that more than half of their patients ($n = 544$, 75.10%) used a tape-bordered skin barrier. They indicated that the tape prevents rolling of the skin barrier and promotes a secure seal for the skin barrier.

Of the 724 participants who were asked what percentages of planned surgery patients are preoperatively marked for a stoma, 352 (49.00%) noted that more than 50% were marked and 249 (34.00%) noted that 25% or less of their patients were marked for a stoma site before surgery. In subsequent discussion, they noted that the joint statement papers from the Wound Ostomy Continence Nurses Society (WOCN),

TABLE 3.	
Questions/Quantitative Answers	
Question	n (%)
What percentages of ostomy patients in your practice develop some type of peristomal skin problem during the time they have their ostomy?	757
0%-25%	168 (22.20)
26%-50%	347 (45.80)
51%-75%	169 (22.30)
76%-100%	73 (9.60)
What is the most common peristomal skin problem in your practice?	755
Irritant contact dermatitis	651 (86.20)
Allergic contact dermatitis	10 (1.30)
Peristomal trauma	10 (1.30)
Peristomal candidiasis	82 (10.90)
Peristomal pyoderma gangrenosum	2 (0.30)
What percentages of your patients present with skin stripping?	744
0%-25%	623 (83.70)
26%-50%	107 (14.40)
51%-75%	14 (1.90)
76%-100%	0 (0)
What percentages of ostomy patients in your practice experience sensitivity to tape?	702
0%-25%	583 (83.10)
26%-50%	99 (14.10)
51%-75%	15 (2.10)
76%-100%	5 (0.70)
What is your topical management of denuded peristomal skin?	736
Powder alone	74 (10.10)
Powder and water	20 (2.70)
Powder and barrier wipe layers	599 (81.40)
Powder and medical adhesive spray	43 (5.80)
What percentages of your ostomy patients in your practice require convexity?	753
0%-25%	172 (22.80)
26%-50%	352 (46.80)
51%-75%	191 (25.40)
76%-100%	38 (5.00)
Do you use convexity in the immediate postoperative period?	733
Yes	289 (39.40)
No	444 (60.60)
What do you teach patients to use for routine peristomal skin cleansing?	758
Only water	604 (79.70)
Commercial bar soap and water	119 (15.70)
Commercial ostomy cleanser	15 (2.00)
Other	20 (2.60)

(continues)

TABLE 3.	
Questions/Quantitative Answers (Continued)	
Question	n (%)
What percentages of your patients use a barrier ring to achieve maximum wear time?	751
0%-25%	305 (40.60)
26%-50%	252 (33.60)
51%-75%	123 (16.40)
76%-100%	71 (9.50)
	(45)
What percentages of your ostomy patients routinely use a skin protective film wipe or spray?	734
0%-25%	386 (52.60)
26%-50%	138 (18.80)
51%-75%	86 (11.70)
76%-100%	124 (16.90)
Have you seen an increase in the number of your ostomy patients being readmitted?	717
Yes	276 (38.50)
No	441 (61.50)
Do you routinely teach irrigation to your patients with permanent colostomies?	725
Yes	97 (13.40)
No	628 (86.60)
What percentages of ostomy patients in your practice use tape-bordered skin barriers?	724
0%-25%	84 (11.60)
26%-50%	96 (13.30)
51%-75%	147 (20.30)
76%-100%	397 (54.80)
In your practice, what percentages of planned surgery patients are preoperatively marked?	724
≤25%	249 (34.00)
26%-50%	123 (17.00)
>50%	250 (35.00)
All	102 (14.00)

American Society of Colon and Rectal Surgeons, and American Urological Association encouraged this practice. Reasons for absence of preoperative stoma site marking were limited outpatient care services (Table 3).

DISCUSSION

The aim of this descriptive study was to describe the practice of ostomy nurses in North America related to peristomal skin issues. Participants indicated that more than 3 of the 4 patients with ostomies seek care for peristomal skin problems. This estimate is similar to the rates reported in Salvadalena's systematic review of studies of incidence rates of patients with ostomies.¹ Peristomal moisture-associated skin damage, a type of irritant contact dermatitis, was the most commonly reported peristomal problem; this observation was similar to the trends

reported by Colwell and Beitz⁸ and Gray and colleagues.⁹ The cause is attributed to poor fit of the pouching system (eg, wrong size of skin barrier opening), prolonged wear time, and/or user issues.¹⁰ These causative factors were supported by the respondents in this study. The narrative comments supported and explained the issues involved in both the development and treatment of peristomal complications. As in the Beitz and Colwell¹¹ study, the management techniques of the study participants were not based upon evidence because of the lack of studies in patients with ostomies.

We found that although broad trends in management were present, there was not 100% agreement with any of the management techniques. Research is needed to provide evidence for the efficacy and safety of various interventions.

Limitations

Participants comprised a convenience sample of individuals who attended data collection sessions, and not all participants responded to each question. In addition, it must be noted that responses were based on each participant's perceptions of their practice. Additional research is needed to define the epidemiology, type, and severity of various peristomal skin problems in patients living with an ostomy.

CONCLUSION

We evaluated a large and geographically diverse group of WOCN and ET nurses in North America and described their practice related to peristomal skin problems. Study findings suggest that more than 3 in 4 patients managed by ostomy nurses develop peristomal skin issues. Although trends in management were identified, variability based on educational program and region was noted. Findings from this study

demonstrate the need for additional research and development of standardized practice based on clinical evidence.

REFERENCES

1. Salvadalena G. Incidence of complications of the stoma and peristomal skin among individuals with colostomy, ileostomy, and urostomy: a systematic review. *J Wound Ostomy Continence Nurs.* 2008;35(6):506-507.
2. Ratliff CR. Factors related to ostomy leakage in the community setting. *J Wound Ostomy Continence Nurs.* 2014;41(3):249-253.
3. Erwin-Toth P, Thompson SJ, Stoia Davis J. Factors impacting the quality of life of people with an ostomy in north America results from the dialogue study. *J Wound Ostomy Continence Nurs.* 2012;39(4):417-422.
4. Ratliff CR, Scarano KA, Donovan AM. Descriptive study of peristomal complications. *J Wound Ostomy Continence Nurs.* 2005;32(1):33-37.
5. Herlufsen P, Olsen AG, Carlsen B, et al. Study of peristomal skin disorders in patients with permanent stoma. *Br J Nurs.* 2006;15:854-862.
6. Richbourg L, Thorpe JM, Rapp CG. Difficulties experienced by the ostomate after hospital discharge. *J Wound Ostomy Continence Nurs.* 2007;34(1):70-79.
7. Wick EC, Shore AD, Hirose K, et al. Readmission rates and cost following colorectal surgery. *Dis Colon Rectum.* 2011;54:1475-1479.
8. Colwell JC, Beitz J. Survey of wound, ostomy and continence (WOC) nurse clinicians on stomal and peristomal complications: a content validation study. *J Wound Ostomy Continence Nurs.* 2007;34(1):57-59.
9. Gray M, Colwell JC, Doughty D, et al. Peristomal moisture associated skin damage in adults with fecal ostomies: a comprehensive review and consensus. *J Wound Ostomy Continence Nurs.* 2013;40(4):389-399.
10. Colwell JC. Selection of pouching system. In: Carmel JE, Colwell JC, Goldberg MT, eds. *Wound Ostomy and Continence Nurses Society Core Curriculum Ostomy Management.* Philadelphia, PA: Wolters Kluwer; 2016.
11. Beitz M, Colwell JC. Management approaches to stomal and peristomal complications. *J Wound Ostomy Continence Nurs.* 2016;43(3):263-268.