What Do Surgical Oncology Staff Nurses Know About Colorectal Cancer Ostomy Care?

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abstract

Background: For most patients diagnosed with colorectal cancer, dealing with the adjustment and rehabilitation after treatment can be overwhelming. There is a significant need for expert educational and counseling support, especially for the patient with a new ostomy. This pilot study describes acute care oncology staff nurses' knowledge about and attitudes toward providing direct ostomy care support and education. This study is part of a larger project assessing gaps in education and services in support of patients with colorectal cancer.

Methods: The Survey on Ostomy Care questionnaire designed to assess nurses' knowledge about and attitudes toward ostomy care was administered to oncology staff nurses at a comprehensive cancer center.

Results: Only 30% of staff nurses surveyed strongly agreed or agreed with the statement, "I care for ostomy patients often enough to keep up my skills in ostomy care." Maintaining staff nurses' ability to teach and demonstrate to patients complex care such as ostomy care depends on the ability to practice both education and hands-on skills. Staff nurses identify that lack of opportunity to care for the new ostomy patient influences their ability to maintain skill expertise.

Conclusion: The results show the need to explore the provision of ongoing staff education for low-volume patient populations using creative teaching strategies, such as clinical simulation and short videos.

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In 2008, nearly 148,810 people were diagnosed with colorectal cancer, with approximately 49,960 patients dying of the disease (American Cancer Society, 2008). For most of these patients, surgery is the first line of treatment, followed by other adjuvant modalities, such as chemotherapy, targeted therapy, or radiation. In select cases, based on staging, adjuvant therapies might precede surgery. Either way, the selection of therapy options is complex and vexing to most individuals faced with making decisions about care. Given the complexity of treatment options before and after surgery, there is a significant need for specific educational and counseling support. Hence, patient teaching along the continuum of care becomes vitally important to patient understanding, skill mastery, and optimal recovery. This is especially true for the patient with a new ostomy (Jackson, Pokorny, & Vincent, 1993).

A number of factors in today's health care environment affect the provision of seamless colorectal cancer patient education and support (Anthony & Hudson-Barr, 2004; Secord, Jackman, Wright, & Winton, 2001). These factors include: (1) a decrease in the hospital length of stay as a result of cost constraints and the use of laparoscopic technology; (2) early discharge in the recovery process, challenging acute care nurses to provide appro-

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priate patient education; (3) communication of continuing education needs to the home care nurse for further teaching and follow-up; (4) a shortage of specialized wound ostomy continence nurses to meet the demand, requiring initial patient instruction by the primary clinical or acute care nurse; (5) ineffective multidisciplinary coordination of care; and (6) a variety of ways in which patients today can obtain information on the disease and treatment (e.g., from health care professionals, nonprofit cancer societies such as the American Cancer Society, and the Internet). Each of these factors contributes to the potential for fragmentation in patient education and services.

Understanding how patients perceive their experience and obtain needed information on disease and treatment is critical to the establishment of a standardized structured educational and support program. More importantly, there is a need to understand the acute care staff nurse's current knowledge level and confidence regarding the ability to provide patient education support to the new ostomy patient. Few studies have explored nurses' perceptions of their ability to provide direct care and support ostomy education (Jackson et al., 1993; Moore, Grant, & Katz, 1998). This article describes a pilot survey of surgical oncology nurses' knowledge and attitudes about the provision of direct ostomy care support and education. It is part of a larger project assessing gaps in education and services available for the colorectal cancer patient. Descriptive data obtained from a survey of surgical oncology nurses' knowledge about and attitudes toward ostomy care will serve as a foundation for identifying testable interventions to improve care of the colorectal cancer patient with an ostomy.

REVIEW OF THE LITERATURE

More people than ever before are surviving cancer. The 5-year survival rate for colorectal cancer increased from 51% in the mid-1970s to 65% in 2004 (American Cancer Society, 2008). This is changing the view of cancer as an acute incurable disease to one of a manageable chronic disease. Patients who have had surgery with an ostomy require short- and long-term follow-up to adjust and manage complications. Educational needs identified by patients with an ostomy include stoma care skills, counseling, diet, obtaining supplies, and management of complications (McMullen et al., 2008; Readding, 2005).

Increasingly, there is a need for a comprehensive rehabilitative colorectal cancer program to address ongoing management of symptoms and complications across the disease continuum. Establishing a comprehensive program to meet the educational and service needs of the patient with colorectal cancer is essential to providing quality effective care. Moreover, there is a shift taking place in how involved patients want to be in making decisions and obtaining health-related information and care. Younger patients are more Internet-savvy and more active in their health care choices, whereas older patients tend to rely on the physician or care provider for information and decision support (Al-Bahrani & Plusa, 2004). Patients value the presence of the multidisciplinary care team to provide information and manage care, beginning early in the diagnosis and continuing across the disease trajectory (Board, 2007). Thus, timely assessment of patient learning needs and style is critical to successful education of the patient and family.

Patient education is an expected standard of care for oncology nurses (Boyle, Bruce, Iwamoto, & Summers, 2004). Surgical oncology staff nurses play an important role in initial assessment and the provision of instrumental and educational support to the patient with colorectal cancer, both preoperatively and postoperatively, transitioning the patient to community-based care. Consequently, the knowledge base and skill level of each nurse affects the care and education of the patient. Nurses need to have core knowledge and skills in the management of colorectal cancer care, specifically ostomy care, as well as an understanding of how the care provided is linked to other care providers along the illness continuum. Basic competency for all acute care nurses providing care and educational support for the new postoperative ostomy patient should include the following: stoma assessment, pouch fitting, pouch emptying, access to resources and supplies, and basic problem-solving skills (Boarini, McNichol, Carmel, Goldberg, & Pruitt, 2004). A few studies have shown the importance of nursing knowledge and confidence as it relates to new ostomy patient satisfaction (Jackson et al., 1993; Moore et al., 1998). Findings show a possible link between how nurses perceive their competence, their level of ongoing in-service education, and ostomy patient satisfaction. Nurses who perceive themselves to have high competence and a favorable perception of the ostomy patient were found to have had significantly more education (Moore et al., 1998). Ostomy patients who were cared for by a nurse who was highly confident were more satisfied with their care (Jackson et al., 1993). Thus, nurses' perception of their level of knowledge and skill affects how the ostomy patient perceives the care experience. In another study examining the use of an educational intervention to improve nursing knowledge in caring for the patient with colorectal cancer, researchers showed significant improvement in disease-related knowledge from pre- to postintervention

(Knowles et al., 2008). Additionally, nurses attending this self-directed educational intervention program showed positive attitudes toward patients with colorectal cancer 4 months postintervention and maintained knowledge gained during the program (Knowles et al., 2008).

One of the challenges associated with maintaining staff nurse competency is the infrequency with which the average staff nurse interacts with the new or long-term colorectal cancer survivor with an ostomy. Lack of regular and consistent interaction leads to less opportunity to care for patients with an ostomy and therefore less opportunity to keep staff nurses' skills current. In addition, there is a shortage of specialty wound ostomy continence nurses nationally, leaving care of the new or long-term ostomy patient to the acute care, clinical, and home health staff nurse. Increased staff nurse expertise and confidence will facilitate optimal ostomy patient skill mastery and complement the work of wound ostomy continence nurses and other health care team members in providing care to the new ostomy patient.

CONCEPTUAL FRAMEWORK

The focus of care for the patient with colorectal cancer includes the restoration of optimal health and well-being. Nursing plays a critical role in caring for the patient with colorectal cancer by helping the patient to identify and attain goals to maintain or restore optimal health and well-being. The conceptual framework for this pilot study was King's theory of goal attainment (King, 1999). Goal attainment denotes an outcome or a measure of quality. Within this model, nursing has a pivotal role in goal attainment. Through a series of interactions with the patient, family, and health care team, the nurse helps to identify mutual goals and the means to achieve the goals in the pursuit of maintenance or restoration of optimal health (King, 1999). The staff nurse's knowledge and ability to communicate in a way that the patient views as accepting facilitates effective interaction and goal attainment. Providing patients with information about their disease, treatment options, symptom management, and self-care can be a powerful tool in assisting patients with colorectal cancer to make decisions for optimal health.

METHODS

This pilot study used a mixed-method descriptive study design to explore nurses' knowledge of basic ostomy care and attitudes about their own confidence in providing nursing care for this population. A convenience sample of acute care oncology staff nurses was recruited from both the inpatient surgical oncology floor and the intensive care unit (ICU) at a designated comprehensive cancer center in the Southern California area. English-speaking acute care staff nurses working full time on either the day or night shift on the surgical oncology unit or in the ICU were eligible to participate in this study after institutional review board approval was obtained.

The Survey of Ostomy Care questionnaire was created by a wound ostomy continence nurse based on an extensive literature search using the Cumulative Index to Nursing and Allied Health Literature and Medline databases (O'Shea, 2001; Secord et al., 2001). Content validity was performed by three advanced practice nurses. The tool was pilot tested with a convenience sample of full-time surgical oncology staff and ICU nurses. This tool was specifically designed to assess staff nurse ostomy knowledge and attitudes regarding the provision of ostomy care. The first section included six forced-choice demographic questions, followed by 22 items on knowledge of ostomy and colorectal cancer care. This section included multiple-choice and true-false questions. The next section was a 15-item Likert scale addressing staff nurse confidence and attitudes about the ability to care for patients with an ostomy. Each item on the five-point Likert scale was scored as 1 (strongly disagree) to 5 (strongly agree). Finally, the last section of the survey consisted of three open-ended questions about (1) resources, (2) barriers, and (3) comments.

Patients with colorectal cancer were also surveyed about their perception of care using the Quality of Life Questionnaire for Patients Following Abdominal Surgery. This tool identifies demographic, disease, treatment, ostomy-specific, and other personal characteristics, including diet, work, and activity, as well as issues concerning wound care, bowel and urinary function, sleep, activity level, and colorectal cancer education. For this article, the authors focused only on the colorectal cancer patients' perceptions of the education received. Patients were asked seven questions about their perception of the education they received, including their understanding of the information and the information they found most useful.

One nurse researcher performed the administration and distribution of the survey. All surveys were anonymous and did not include identifying information. Survey questionnaires were distributed by the nurse researcher to staff nurses who were eligible to participate on both the day and night shifts. One nurse champion also assisted with distribution and collection of approximately five surveys. Nursing staff who elected to participate were informed, verbally and in writing, of the anticipated benefits and risks of participation. Some staff completed the survey on the spot, and others elected to

TABLE 1
RESPONSES TO STAFF SURVEY OF OSTOMY CARE KNOWLEDGE (*N* = 19)

Score (%)	No. of Participants With Score
95	1
91	2
86	3
82	1
77	6
73	2
68	1
59	3

complete the survey on their own time. The nurse researcher returned a few days after distribution and collected the remaining surveys.

Descriptive statistics were used to describe the respondents' demographic features, knowledge, and attitudes. Content analysis of open-ended questions was conducted. One investigator read the qualitative answers to each question and organized answers into specific codes or answers. Two other investigators verified the results. Discrepancies were discussed among investigators, and disagreements were reconciled. Reliability statistics were calculated for the 22-item knowledge measurement portion of the survey and for the 15-item attitude assessment. The knowledge assessment had a Cronbach's alpha of 0.72, and the attitude assessment had a Cronbach's alpha of 0.95.

RESULTS

For this pilot study, a total of 21 surveys were distributed to a convenience sample of staff nurses working on the surgical oncology floor and in the ICU. A total of 78 nurses were eligible to participate in the study. Twenty-one nurses initially agreed to complete the survey when approached, for a response rate of 27%. Although 21 nurses consented to participant in the convenience sample pilot study, a variation in response data was observed, with 19 staff nurses responding to most data elements. Missing data did not show any pattern.

Most nurses who participated in this survey had an average of 16 years of nursing experience, with a range of 1 to 35 years. Experience as an oncology nurse was similar, with an average of 15 years and a range of 1 to 28 years. The oncology experience was all at the current cancer setting. Of the nurses responding, 57% were baccalaureate-prepared. All reported caring for a new ostomy patient within 6 months before the completion of the survey. In this sample of staff nurses, the majority of responses on the knowledge survey showed that staff have a fair working knowledge of the principles of ostomy care. The mean score was 77%, with a range of 59% to 95% (Table 1). This large range of scores underlines the need to evaluate nursing knowledge before the implementation of continuing education opportunities and focus on those who need the education, as indicated by low scores.

Although most staff nurses recognized the need for postoperative pain management to mobilize the patient for return of bowel function, the importance of maintaining peristomal skin integrity, correct skin barrier wafer and appliance fitting, and emergent stoma characteristics signaled the need for consultation with the physician. Only four nurses identified reading the surgical report as a source for determining the location and type of ostomy created during surgery.

For the Survey of Ostomy Care attitude section, responses were categorized into three primary areas: (1) staff nurse confidence in assessment and ostomy skills; (2) perception of resources as a staff nurse; and (3) staff nurse perception of the patient's level of preparedness before discharge. For the statement, "I feel confident that I can assess my patient's ostomy well enough to care for my patient with an ostomy at this time," 80% of respondents indicated that they either agreed or strongly agreed. In contrast, for the statement, "I care for ostomy patients often enough to keep up my skills in ostomy care," only 30% of respondents either strongly agreed or agreed. In terms of access to resources, 74% of respondents agreed or strongly agreed with the statement, "I know who to call for answers about ostomy care should I encounter a problem." However, only 30% of respondents agreed or strongly agreed with the statement, "There is adequate staff education or in-service opportunities to keep my knowledge up to date on ostomy care." As for nursing perception of patient preparedness, 70% of staff had concerns about how well prepared patients were to care for themselves at home. Table 2 lists the statements and the survey results.

Qualitative data were derived from open-ended questions at the end of the knowledge and attitude survey. Resources needed to provide improved patient education on ostomy care were described by respondents and included an information booklet, an instructional video, demonstration of care, and follow-up in the home by nurses (Table 3). Perceived barriers to patient education as reported by these nurses included patient barriers as well as the challenges of current limited hospital stays (Table 3).

TABLE 2

RESULTS OF STAFF SURVEY OF ATTITUDES TOWARD OSTOMY CARE (*N* = 19)

Question	% Strongly Disagree	% Disagree	% Neutral	% Agree	% Strongly Agree
Staff confidence					
I feel confident that I can assess my patient's ostomy well enough to care for my patient with an ostomy at this time.	0	0	20	65	15
I feel confident that I have the skills to size, fit, and apply an ostomy appliance at this time.	0	5	30	50	15
I feel confident that I can advise my patients on community resources for supplies, education, and support well enough at this time.	0	5	30	30	25
I feel confident that I have the background, knowledge, and experience in ostomy care to sufficiently care for my patients at this time.	0	10	32	42	16
I feel confident that I can teach my patients well enough to care for themselves at home at this time.	0	25	30	30	15
I feel confident that I know enough about the different types of appliances for the various ostomies and patients' conditions to adequately select the proper ones for my patient at this time.	0	35	25	30	10
I care for ostomy patients often enough to keep up my skills in ostomy care.	0	35	35	20	10
Staff resources					
I know who to call for answers about ostomy care should I encounter a problem.	0	16	10	42	32
I have the proper patient teaching materials (booklets, pamphlets, videos, etc.) to teach my patients/family about ostomy care.	0	15	20	45	20
If I am unsure about any aspect of ostomy care, there is someone available who can answer my questions.	0	20	15	35	30
I have enough time during my shift to teach ostomy care to my patient/family.	0	30	35	35	0
There is adequate staff education or in-service opportunities to keep my knowledge up-to-date on ostomy care.	5	30	35	20	10
Patient preparedness for discharge					
Patients are well informed about what to expect regarding their condition, expected changes, and care at home at the time they leave the hospital.	0	15	40	35	10
I feel that patients will get adequate follow-up care and teaching after they leave the hospital.	0	10	50	30	10
Patients are well prepared to care for themselves at home at the time they leave the hospital.	0	15	55	30	0

Note. Responses were provided on a scale of 1 to 5, with 1 = strongly disagree and 5 = strongly agree.

Information on colorectal cancer patients' perception of educational preparation was obtained from the patient survey. Although many of the colorectal cancer patients with a new ostomy reported receiving "just enough" education postoperatively, few, only 12.5%, identified the education provided by the nurse as particularly useful. This is likely related to the fact that 60% of patients reported receiving most of their information preoperatively in the clinic. The survey did not address education given postoperatively on the nursing unit.

DISCUSSION

In caring for the new postsurgical colorectal cancer patient, it is important to understand the patient's view

TABLE 3
RESOURCES AND BARRIERS IDENTIFIED BY STAFF NURSES

Resources for Patient Education	Barriers to Patient Education
Information booklets for patients	Patient language skills
Patient instruction video	Patient not yet emotionally adjusted to ostomy
Demonstration of ostomy care	Patient cognitive limitations
Follow-up after discharge by wound ostomy continence nurse	Short postoperative period and insufficient teaching time

of gaps in service and education along the continuum of care to develop interventions or programs to address unmet needs and support ongoing adjustment. For the postsurgical colorectal cancer patient with an ostomy, this is especially vital because mastery of new skills in daily care influences patient adjustment (Metcalf, 1999). Because of the direct relationship of the patient and the nurse, staff nurses' knowledge and attitudes about direct care and patient teaching for the new colorectal cancer ostomy patient are important.

Overall, this pilot survey of surgical oncology staff nurses' knowledge and attitudes regarding care for the colorectal cancer ostomy patient showed that staff nurses' perception of their confidence in the ability to care for these patients is dynamic and greatly influenced by the opportunity to practice the skill. In addition, staff nurses' perception of available resources to assist with colorectal cancer ostomy care was high. The perception of patients' lack of emotional adjustment to the new ostomy was considered a barrier to care after discharge.

Knowledge of the principles of postoperative ostomy care was moderately good, with 79% of staff nurses scoring 70% or higher. However, there is room for improvement. Maintaining staff competency is a dynamic process that requires ongoing specialized continuing education and is especially important for low-volume patient populations. Several studies reported that increasing nursing staff education efforts increases nursing staff knowledge, skill retention, and competence (De Lorenzo & Abbott, 2007; Knowles et al., 2008; Stefanidis, Korndorffer, Markley, Sierra, & Scott, 2006). Use of simulation methods is especially valuable in low-volume situations.

Another interesting finding of this pilot study was that only a few staff nurses identified review of the surgical report as a source of information for determining the location and type of ostomy. This suggests that the use of this resource is not viewed as necessary for planning and providing care to the postsurgical colorectal cancer patient, or it reflects a culture reliant on verbal communication of the patient's condition. It might also indicate a deficit in staff nurses' knowledge related to the significance of knowing how much bowel was removed during surgery and the site of removal. This finding emphasizes the importance of staff nurses' knowledge and skill in caring for the new ostomy colorectal cancer patient.

Maintaining knowledge and skill competency is almost always dependent on the ability to practice the skill. In this case, staff nurses identified that lack of opportunity to care for the new ostomy patient influences their ability to maintain skill expertise. It is difficult to maintain ostomy care knowledge and skill if the number of patients seen in a given period is not sufficient for skill retention. This is especially true for the acute care community hospital setting. For the study institution, the number of new colorectal cancer ostomy patients is approximately 30 per year, or approximately 2 to 3 per month.

Despite acknowledgment by staff nurses that they have proper patient teaching materials to teach the new ostomy patient, the nurses also identified the need for information booklets, videos, or a demonstration mannequin to improve patient education on ostomy care. Additionally, nurses' perception of patient preparedness was low, suggesting that nurses' ability to assess patient learning needs and use existing patient teaching resources might be the issue rather than a lack of patient education materials. One reason for this finding might be that what the staff nurse perceives to be important to teach is not what the patient perceives to be important to know. In a recent study exploring the congruence between nurses' and colorectal cancer patients' identification of patient information needs before discharge, researchers reported that patients' priority information needs included access to further health care, complications, and medications, whereas nurses identified priority information needs as wound and ostomy care, complications, and information about the illness and recovery (Anthony & Hudson-Barr, 2004). These findings highlight the importance of teaching staff nurses how to assess for patient information needs before any patient teaching encounter.

Staff nurses are generally prepared to provide bedside care and less prepared to educate patients about post-discharge self-care. A recent integrated review empha-

sized the need to address both education and individual patient learning characteristics and needs when addressing postoperative education (Fredericks, Guruge, Sidani, & Wan, 2010). It is therefore important for nurses to be trained in how to integrate patient teaching methods into the delivery of patient care. Recent research by Burkhart showed enhanced patient-nurse communication and patient retention of information after staff instruction on how to integrate patient teaching skills into practice (Burkhart, 2008).

This study identified emotional adjustment after postsurgical ostomy care as a barrier to patient education by the nursing staff. This finding is similar to that of a study examining staff nurse perception of variables that enhance or inhibit effective patient education (Marcum, Ridenour, Shaff, Hammons, & Taylor, 2002). Staff nurses identified that when patients were not receptive to teaching, nurses' ability to provide patient education was inhibited. This finding shows the importance of assessing patient emotional readiness for information. A study detailing enterostomal therapy students' perception of the role of the nurse in managing an ostomy before and after the experience of wearing an ostomy pouch found that, before wearing the ostomy pouch, nurses defined their role in terms of managing the technical aspects of ostomy care and focusing on the ostomy. In contrast, after wearing an ostomy pouch, the nurses took a more holistic view of the patient with an ostomy (Santos & Sawaia, 2001).

An interesting feature of this pilot study was recognition of the role of the nurse champion in facilitating study accrual. The nurse champion possessed a keen interest in the care of the new colorectal cancer ostomy patient. To address the retention of skill competency when caring for low-volume or complex patient populations, innovative educational programs have shown effectiveness using a designated specialty resource nurse (Lancellot, 1996; Mascolo, 2006; Paice, Barnard, Creamer, & Omerod, 2006). However, one outcome can be a hindrance to staff nurse competence because of dependence on the nurse champion for the specialty skill set.

CONCLUSION

In summary, this pilot study showed that skill retention among surgical oncology staff nurses caring for the new colorectal cancer ostomy patient is difficult when the number of opportunities to maintain practice is limited. Strategies for supporting ongoing staff nurse knowledge and skill retention include offering colorectal cancer continuing education classes, providing just-in-time online videos, identifying a nurse champion as a staff resource, and employing or collaborating with the local wound ostomy continence nurse.

Staff nurses' skill in assessing patient learning needs, readiness for learning, and learning style is critical to successful patient education of the new colorectal cancer ostomy patient. Nurses are generally trained to care for the patient, not carry out patient education. Training nurses in how to teach patients during their regular shift recognizes the important role of patient education in patient retention of information. Teaching nurses how to teach also enhances nurses' confidence in their ability to teach.

Study Limitations

A limitation of the current study was the use of a convenience sample. Although this study design limits the generalizability of the findings, the information provided supports the need for further study of knowledge and skill retention among staff nurses when the opportunity to practice the identified skill is low. Additionally, because this was a pilot study, further study with a larger population of staff nurses is needed. A much larger study of nurses involved in ostomy care will validate the instrument used in the pilot study by providing a more robust measure of reliability and confirming the findings of this study.

Implications for Nursing Practice and Research

Providing care for the colorectal cancer ostomy patient is complex and includes both specialized care of the ostomy and teaching the patient to carry out complex care after discharge. Such care involves both direct patient care and patient teaching. With the major changes that occur with the ostomy patient, physical care and emotional adjustment are needed. This situation requires a well-informed, confident nurse who can not only provide expert clinical care but also integrate patient teaching while delivering care. Patient teaching involves evaluation of the patient's readiness to learn, opportunities for hands-on practice by the patient, and provision of supportive educational materials and resources for use after discharge. Educational needs for nurses in this situation are especially high when low-volume patients, such as colorectal cancer patients with an ostomy, are involved.

Continuing education in this situation includes preparing nurses to carry out patient teaching along with providing physical and emotional care. These teaching principles could be provided through general continuing education courses on patient teaching. The other teaching content that is important for the colorectal cancer ostomy patient is care specific to the ostomy. This education is more challenging and can be accomplished through creative continuing education. Simulation for practice of low-volume care, such as ostomy care, can provide nurses with actual hands-on practice before they

key points

Colorectal Cancer

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1. Maintaining staff competency is a dynamic process that requires ongoing specialized continuing education and is especially important for low-volume patient populations.
2. Providing ongoing staff nurse education about colorectal cancer ostomy care through continuing education involves teaching methods such as just-in-time online videos, use of a nurse champion as a staff resource, and employing or collaborating with a local wound ostomy continence nurse.
3. Staff nurse skill in assessing patient learning needs, readiness for learning, and learning style is critical to successful patient education of the new colorectal cancer ostomy patient.
4. Teaching nurses how to assess patient learning needs and styles and how to integrate patient teaching with patient care is an important component of expert patient care.

perform direct patient care. Such practice can decrease the use of trial and error in patient teaching. The use of short videos, along with access to ostomy care nurse champions and wound ostomy continence nurses, can further assure quality care and patient teaching.

Facilitating continued staff nurse skill development and confidence in meeting new or ongoing colorectal cancer ostomy care needs ensures timely appropriate assessment of patient learning needs, care planning, and intervention. Further study of issues influencing skill retention for low-volume patient populations is warranted.

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