Fall 2015

Educating Home Health Nurses on Peristomal Skin Care

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Submitted as Partial Fulfillment for the Doctor of Nursing Practice Degree

Regis University

August 23, 2015

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Abstract

This Doctorate of Nursing Practice (DNP) project used a quasi-experimental, pre-test post-test design. It was conducted in the Denver area of Colorado. Purpose: The purpose of this quality improvement project is to improve the home health nurses' knowledge regarding peristomal skin care through in-service education provided by a Certified Wound Ostomy and Continence Nurse (CWOCN). Goal: The goal is to improve the nurses' knowledge on peristomal skin care, with the ultimate goal of positively impacting the care of the ostomy patients at home. Knowledge improvement was evaluated by administering an identical pre- and post-test on peristomal skin care. Objectives: 1.) Provide a one-hour, evidence-based in-service to increase the home health nurses' knowledge on peristomal skin care. 2) Administer a pre-test to demonstrate baseline knowledge of participant nurses regarding peristomal skin care. 3) Administer a post-test to demonstrate knowledge acquisition. Methods: Regis University's Internal Review Board approved the study. This author went to the different home health agencies to conduct the one-hour long in-service. Demographic forms were completed by the participants. A test was administered before and after the in-services. Descriptive and inferential statistics were used to analyze the data gathered. Results: 86 home health nurses participated in this project. A statistically significant improvement in mean knowledge scores was noted in the post-intervention assessment, suggesting that educational intervention was successful in increasing nurses' knowledge on the topic. There was a significant difference in the pre- and post-test scores, pre-test (M=.5267, SD=.19062) and post-test (M=.7791, SD=.16458); t (85)=-9.521, $p<.001$. CI=–.30502 to –.19963.

Key words: DNP capstone project, ostomy, stoma

Executive Summary

Educating Home Health Nurses on Peristomal Skin Care

Problem

The problem identified in this project is that the home health nurses have a knowledge deficit about peristomal skin care of patients with incontinent ostomies.

Purpose

The purpose of this project is to improve the home health nurses' knowledge regarding peristomal skin care through in-service education as conducted by a CWOCN. This project is a quality improvement initiative.

Goal

The goal is to improve the care of ostomy patients in the home health setting by improving the nurses' knowledge on peristomal skin care. The different home health agencies which participated in the study supported the implementation of an evidence-based in-service to attain this goal.

Objectives

1. Provide a one-hour, evidence-based in-service to increase the home health nurses' knowledge on peristomal skin care.
2. Administer a pre-course assessment (pre-test) utilizing a published tool to demonstrate baseline knowledge of participant nurses regarding peristomal skin care.
3. Administer a post-course assessment (post-test) utilizing the same published tool to demonstrate knowledge acquisition

Plan

The plan was to offer a one-hour in-service on peristomal skin care to home health nurses in order to help increase their knowledge on ostomy care. This author personally met with the different home health agencies' senior management representative/s to request their participation. Several agencies in the Denver area, Colorado participated in this project.

Outcomes and Results

86 home health nurses participated in the in-services. Then they completed the pre- and post-intervention assessment on peristomal skin care. A statistically significant improvement in mean knowledge scores was noted in the post-intervention assessment, suggesting that the educational intervention was successful in increasing nurses' knowledge on the topic.

Acknowledgements

I would like to thank my capstone chair, Dr. Mary Jo Coast, my clinical mentor, Jisebelle Tizon, my Certified Wound, Ostomy, and Continence Nurse colleagues at work, around the United States, and all over the world, for their help through the years in my journey towards obtaining my doctorate. Thank you to Dr. Cheryl Kruschke who helped me with statistics. I would like to thank the authors of the published tool that I used in this capstone project. Thank you to Dr. Debra Netsch and Bonnie Sue Rolstad. I also want to thank Dr. Debra Behr and my other colleagues and the management of Lutheran Medical Center for helping me with this project. Special thank you to Karlene Martin and other wound and ostomy supply vendors for helping me with ostomy supplies and helping me recruit nurse participants. I would like to express my deepest gratitude to the home health nurses and their agencies. Thank you to the Regis faculty, staff members especially the librarians, and my fellow classmates. Also thank you to my instructors in Emory University, Dorothy Doughty and everyone in their WOCN program.

I would like to thank my mother Virginia, my husband Matt, my grandmother Consuelo, my friends and my family all over the globe, my late grandparents and my late father Larry, for their love and support through the many years I decided to be a perpetual student.

I dedicate this project to all the home health nurses and staff who, every day drive around the streets—rain, shine, snow, sleet, hail—so they can take care of patients living at home. I also dedicate this project to all ostomy patients and to the members of the two Denver area ostomy support groups. Their courage and resilience never fail to inspire me.

Ad majorem Dei gloriam. To the greater glory of God.

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Educating Home Health Nurses on Peristomal Skin Care

The care of the patients in the United States is shifting from institutions such as hospitals, to the home health setting. Home health is thus, a very important healthcare setting in the U.S. It is imperative to support the nurses caring for the patients living in the community. This project was specifically focused on educating nurses who care for home health ostomy (incontinent colostomy, ileostomy, and urostomy) patients. The purpose of this project was to improve the nurses' knowledge about peristomal skin care of their ostomy patients by having a Certified Wound, Ostomy, and Continence Nurse (CWOCN) conduct an in-service in different home health agencies. The presentation was based on evidence-based information and the assessment tool used is a published test that had been previously administered to nurses. Descriptive and inferential analyses were performed to determine the results of this project.

Problem Recognition and Definition

Statement of Purpose

The literature search revealed that peristomal skin issues are one of the most common problems encountered by the patient after hospital discharge (McMullen et al., 2011; Salvaladena, 2013; Taylor, de Azevedo-Gilbert, & Gabe, 2012; Voergaard et al., 2007). According to Meisner, Lehur, Moran, Martins and Jemec (2012) "peristomal skin complications are a constant challenge for a great majority of individuals with a stoma. It is the most common post-operative complication following creation of a stoma" (p. 1). They also described the vicious cycle that ostomy patients suffer with peristomal skin issues: the skin problem causes adhesive issues with the pouching system, which in turn leads to exacerbation of the skin problem. With leakage and peristomal skin issues, the quality of life of the patient diminishes.

In addition to these problems, peristomal skin issues also increase the cost of care and financially affects the patient as well as the society in general (Meisner et al. 2012).

With the majority of patient education now occurring in home health, educating home health nurses is timely and relevant. The goal of this project is to educate select home health nurses on the care of the patients with incontinent ostomies (colostomy, ileostomy, and urostomy—ileal conduit). The specific focus identified is peristomal skin care.

Nurse-sensitive outcomes are linked to nursing roles specific to health outcomes (Kleinpell, 2013). The outcome of the project is to help increase the knowledge of home health nurses regarding ostomy care. The ultimate goal is to improve the nurses' knowledge and skills so they can better care for the ostomy patients. This will result in better patient outcomes such as better quality of life, shorter time to effectively adjust to the ostomy, and report of increased patient satisfaction towards the care received from the home health agency.

This project is a quality improvement initiative and is not intended to create new and generalizable knowledge. Rather, it seeks to address an issue discovered in the home health setting.

Problem Statement

With the trend of care shifting away from inpatient to community settings, the complexity of care delivered by home health agencies also increased. Home health care patients are older, have multiple comorbidities, and many are recovering from serious diseases and complicated surgeries (Bliss, Westra, Savik, & Hou, 2013). By 2050, about 27 million people in the United States are predicted to need some type of community-based health care (Caffrey, Sengupta, Moss, Harris-Kojetin, & Valverde, 2011). A majority of these people will receive care through home health agencies. In 2011, just among the Medicare patients, there were 3.4 million people

who received home health care. There are reportedly 12,026 home health agencies in the U.S. in 2012 (Linehan, 2012).

Over 750,000 Americans currently have an ostomy. Every year, approximately 130,000 ostomy surgical procedures are performed in the U.S. (United Ostomy Association, 2015). About 36 % of the surgeries performed are colostomies, 32 % are ileostomies and 32 % are urostomies (Bales, 2010). In home health, the certified wound, ostomy and continence nurses (CWOCNs) are known to be instrumental in optimizing the health outcomes of ostomy patients. However, there are only of the 5,000 CWOCNs in the U.S., and only 13% of them work in home health (Bliss et al., 2013). With only few CWOCNs serving in the home setting, disseminating information regarding ostomy care is crucial. The role of the CWOCN in providing this education is pivotal. Skingley (2006) emphasized that education of community-based nurses regarding ostomy care will benefit patients.

Beitz, Gerlach, and Schafer (2014) explained that the CWOCNs typically perform the post-operative ostomy education in about three to four visits in the acute care setting. If there is no specialist, the staff nurse is tasked to do the ostomy education. However, the mean length of stay for an uncomplicated fecal ostomy surgery in acute care has decreased from 14 days in the 1980s to 4.5 days in 2010. This means that most of the ostomy education is now performed in long term facilities or at home. But most patients have not been satisfied with the non-specialty staff nurses' confidence and skills in delivering ostomy care (Beitz et al., 2014).

PICO Statement and Question

PICO is a method of putting together a search strategy that allows one to take a more evidence based approach in answering a clinical question (Warwick University, 2014).

In this capstone project, the problem identified and the Population, Intervention, Comparison, and Outcome or PICO are as follows:

Educational practice issue: Knowledge deficit of home health nurses regarding peristomal skin care of patients with incontinent ostomies (colostomy, ileostomy and urostomy).

Question: Will an in-service education focusing on peristomal skin care provided by a CWOCN (Certified Wound, Ostomy, and Continence Nurse) improve the knowledge of home health nurses?

Statement: Home health nurses will improve their knowledge about peristomal skin care after they receive an in-service from a CWOCN.

P: Home health RNs (registered nurses) and LPNs (licensed practical nurses) from select home health agencies in Colorado.

I: In-service education that includes a lecture and hands-on demonstration in select home agencies.

C: Current practice in those agencies–they have no CWOCN on staff to do their staff education on ostomy care.

O: Home health nurses, who receive ostomy education from a CWOCN, will have increased knowledge regarding peristomal skin care.

The purpose of this evidence-based practice (EBP) project is to improve the home health nurses' knowledge regarding peristomal skin care through in-service education as conducted by a CWOCN. This project is a quality improvement initiative. The author works in an acute care setting that refers ostomy patients to home health agencies. The agencies that will be included in the project are the ones that this author's employer uses as well as other agencies in the Denver area. The agencies that will be selected must not have any CWOCN on staff nor as consultants.

This author's ultimate mission is to improve care of patients in the community by providing education on ostomy care, with a specific focus on peristomal skin care, to home health nurses.

Project Significance, Scope, and Rationale

Improving ostomy care specifically focused on peristomal care is the practice issue this author addresses in this capstone project. The short inpatient hospital stay post-ostomy surgery limits the opportunities of patients and families in learning ostomy self-care (Grant, McCorkle, Hornbrook, Wendel, & Krouse, 2013; Walker, Rau, & Green, 2015). However, not most of the ostomy patients the majority of who are discharged to their homes will receive support from the CWOCNs post discharge. The CWOCNs are educated and certified in the care of this unique population but only about 13% of them work in the home setting. Home health nurses are usually faced with the challenges of "failed handoffs, limited resources, poor care coordination, and knowledge and skill deficits that negatively impact the gap in safe and effective discharge practices of patients with a new ostomy" (Walker et al., 2015, p. 387). Walker and Lachman (2013) also identified the following as factors that can negatively affect provision of good ostomy care: 1) negative pre-established nursing view, 2) nurses' inexperience in providing ostomy care, and 3) nurses' lack of educational resources. From the literature review, this author's experiences as a former home health nurse, and anecdotes gathered from fellow CWOCNs, there is a need to address the ostomy care knowledge of home health nurses.

The intention of this project is to help deliver ostomy care education to home health nurses. Topics include routine peristomal skin care; identification of peristomal skin characteristics that complicate pouching system success; identification of causative factors, clinical features, and prevention/intervention measures for each of the following: a) contact

dermatitis, b) folliculitis, c) fungal "yeast" dermatitis, d) mechanical injury, and e) mucocutaneous junction separation; and identification of factors in selecting a pouching system for an individual patient.

These topics are the commonly discussed issues in peristomal skin care (Wound, Ostomy, and Continence Nursing Society [WOCN], 2007). The in-service is only an hour long. The author considered that for most home health agencies, the opportunities for learning are usually done during in-services, usually one-hour long, and usually during their staff members' lunch break. The focus was singular: peristomal skin care because: 1) the literature search revealed that this is an important issue to address; 2) from this author's experiences and from anecdotes of her CWOCN colleagues, this was identified as an issue that must be addressed; and 3) time constraints—a single focus about ostomy care will make it feasible for both this author and the participants to complete the in-service in the hour allotted.

Theoretical Foundation

Knowles' Theory of Adult Learning also informs this project. McEwen & Wills (2011) explicated the theory by Malcolm Knowles. Using this theory, the home health nurses as adult learners are described as problem-oriented, self-directed and motivated. These learners would like to learn knowledge and skills that will help them solve their immediate problems. They are also experienced professionals who can relate their experiences with the educational focus, peristomal skin care. The home health nurses take care of ostomy patients and they need to learn from a certified ostomy care nurse who can share her/his expertise on the subject.

The nursing theory that informs this project is Jean Watson's Theory of Caring Science as Sacred Science. Incorporating the ten carative factors (McEwen& Wills, 2011) in Watson's theory, this author is pursuing this project in order to help the patients as well as the home health

nurses. The following table lists the ten carative factors and how this capstone project takes them into consideration.

Table 1: Watson's Ten Carative Factors in Relation to this Project

Carative Factors	**How this project addresses the carative factors**
Humanistic-altruistic system of values	This project aims to help others— the patients as well as the home health nurses.
Faith—hope	Decreasing ostomy leakage and addressing peristomal skin issue will hopefully help patient become less depressed and less isolated as he/she lives with an ostomy. It is a goal of this project to provide hope to this group of patients.
Sensitivity to self and others	This project made this author aware of her strengths and what she can contribute to society through her training and education. This project aims to help patients as well as the nurses working with them.
Developing helping—trusting, caring relationship	The goal of the project is to improve the skills and knowledge of the nurses as they deal with ostomy patients. The increase in competency will enable nurses to care for the patients and hence, enhance trust and engender a caring relationship.
Expressing positive and negative feelings and emotions	With the in-service education, the nurses can raise questions related to any issues they may have regarding caring for patients with ostomies. Increasing the nurses' knowledge regarding ostomy care will hopefully help the nurses better understand and empathize with this group of patients.
Transpersonal teaching—learning	The in-service education is one way to help educate the nurses.
Supportive, protective, and/or corrective, mental, physical, societal, and spiritual environment	This in-service education seeks to support appropriate interventions for peristomal skin issues. It will help clarify any inappropriate interventions or misguided ideas the nurses may have had regarding peristomal skin care.
Human needs assistance	The home health nurses need continuing education as part of their professional growth. An in-service such as this project will help

	address that need.
Existential-phenomenological and spiritual forces	This project aims to help the patients as they deal with the lived experience of living with an ostomy. The nurses helping them will also benefit from this project. Although this project does not directly address spiritual needs, the patients may be able to better attain peace of mind and address their other needs by being able to deal with their ostomies better. Having less leakage and less discomfort from peristomal skin issues will give patients more time to attend to their other needs.

Literature Selection and Scope of Evidence

A review of literature helps identify, analyze, assess and interpret a body of knowledge related to a particular topic. It also sets a context for a study and provides a rationale for addressing a particular research question in the light of an existing body of literature (Jones, 2007). A search was made using the Regis library website. The search engines used were Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and PubMed. Using the following terms, the author obtained these number of articles using the following terms and combination of terms. Table 2 shows the initial number of articles found using the search terms as listed in the table. The search was narrowed to publications using the English language only. Articles written from 1990 to 2014 were considered. Ancestry research was also conducted. A total of 45 articles were included.

Table 2: Literature Search

Terms	**Number of articles**
ostomy knowledge, nursing care, ostomy, stoma	**69**
ostomy; stoma; education	**404**
nurse; education; home health	**438**
nurse; education; learning style	**39**
home health nurse; competency	**345**

Based on the level of evidence as per Houser and Oman (2010), there are only three Level 2, randomized control trial in this review. There are six Level 5 articles in the form of literature reviews. Most of the articles are Level 6, and they are mostly quantitative studies. The themes of the literature review are summarized in the following table.

Table 3: The Themes of the Literature Review

Themes and number of articles	**The 45 scholarly articles citing the authors and year of publication**
There are numerous post-operative, discharge, and educational needs of ostomy patients. 8	Crawford, et al. (2012) Chaudhri, Brown, Hassan, and Horgan (2005) Danielsen, Soerensen, Burcharth, and Rosenberg (2013) Grant, McCorkle, Hornbrook, Wendel, & Krouse (2013) Johnson (2012) Kristensen, Laustsen, Kiesbye, and Jensen (2013). Lo et al. (2010) Pieper et al. (2006)
Patients' quality of life is affected by having an ostomy. They have to adapt to living with an ostomy. Stoma management is involved and requires training of patients and/or families and/or caregivers. Supplies used such as ostomy bags/pouches also impact ostomy care and adaptation. 13	Aronovitch, Sharp, and Harduar-Morano (2010) Gray and Beitz (2005). Haugen, Bliss, and Savik (2006) Krouse et al. (2009) Persson, and Hellström (2002) Popek et al. (2010) Simmons (2014) Stott, Graaf, Morgan, Kittscha, and Fairbrother (2013) Sun et al. (2012) Sun et al. (2013) Taylor, de Azevedo-Gilbert, and Gabe (2012). Thorpe, McArthur, and Richardson (2014) Voergaard et al. (2007)
There are numerous ways nurses learn skills. Nurses have various learning styles. 6	Andrusyszyn, Cragg, and Humbert (2001). Brown, Kirkpatrick, Greer, Matthias, and Swanson (2009). Estabrooks et al. (2005). Irving, Irving, and Sutherland (2007). Rassool and Rawaf (2007).

	Robinson, Scollan-Koliopoulos, Kamienski, and Burke (2012)
Home health nurses have unique professional roles. 2	Furåker, C. (2008). Sneltvedt, Odland, and Sørlie (2010)
Patients have ostomy complications—peristomal complications, peristomal skin issues, and the like. 6	Keller, Khorgami, Swendseid, Khan and Delaney (2013) McMullen et al. (2011) Ratliff, Scarano, and Donovan (2005) Richbourg, Thorpe, and Rapp (2007) Salvadalena (2008) Salvadalena (2013)
Staff nurses need education regarding ostomy care. There is a need to improve their competence. 10	Adams, Dufton, Lamb, and Taylor (2003). Bales (2010) Beitz et al. (2010) Beitz, Gerlach, and Schafer (2014) Duruk and Uçar (2013) Gemmill et al. (2011) Maxwell (2009) Moore, Grant, and Katz (1998) Recalla et al. (2013) Skingley (2006)

From the literature review, peristomal skin issues are important to address especially in the home health setting where most of the ostomy education take place. The home health nurses do not regularly care for ostomy patients and thus, reviewing ostomy care skills will be important in making them better equipped in caring for ostomy patients. In this project, the focus is teaching home health nurses skills in peristomal skin care. The teaching method identified is in a form of in-service, a one-hour educational session involving lecture and hands-on demonstration. The instrument measured to test the knowledge of the nurses regarding peristomal skin care is a previously published ten-item test that is part of a continuing education online class. To this author's knowledge, there is no published standardized test measuring the nurses' knowledge related to peristomal skin care. The instrument selected in this study is short and hence can be administered pre- and post-test in a one hour in-service. The test had been administered to

nurses before and several CWOCNs had validated its content. This is discussed later in this paper.

Review of Evidence

Background of the Problem

Peristomal skin issues have been identified as a common issue that ostomy patients need to address post hospital discharge (Burch, 2014; Meisner et al., 2012; Pittman, Bakas, Ellett, Sloan, and Rawl, 2014; Ratliff, 2010; Ratliff, Scarano and Donovan, 2005; Recalla et al., 2013; Salvadelana, 2008; Salvaladena, 2013). Peristomal skin issues are the most common post-operative complications following stoma creation (Meisner et al., 2012). When these issues are not addressed, there are consequences that the patients suffer and not to mention the financial costs incurred (Beitz et al., 2010). Home health nurses are tasked with ostomy care and education of the patients at home. However, there are gaps in the home health nurses' ostomy education (Walker et al., 2015). This project, therefore intended to address these nurses' educational needs regarding ostomy care. Walker et al. (2015) highlighted that the CWOCNs are specially educated and certified in caring for ostomy patients. They are the experts in preoperative and postoperative care of these patients which help promote their long-term adjustment. This author is a CWOCN and she designed the in-service presentation and educated the home health nurses who participated in this study.

Literature Review

Six per cent to 66.8% of ostomy patients develop peristomal or stoma complications (Beitz, et al. 2010). The rates vary widely because of the lack of standardized terminology and definitions for stomal and peristomal complications and the absence of a database that tracks down patient outcomes (Ratliff, 2010). To improve standardization, researchers are currently

developing instruments related to peristomal and stomal complications such as the Pittmann Ostomy Complication Severity Index or OCSI (Pittman et al., 2014), the Ostomy Skin Tool or OST (Martins, Tavernelli & Serrano, 2008; Jemec et al., 2011), Studio Alterazioni Cutanee Stomali or the Study on Peristomal Skin Lesions also known as SACS Instrument (Bosio, Pisani, & Lucibello, 2007), and the Ostomy Algorithm (Beitz et al., 2010).

The review of literature revealed that peristomal skin issues are the most common post-operative complications following stoma creation (Meisner et al., 2012). When these issues are not addressed, the consequences include delay of patient's rehabilitation, diminished quality of life, and increase in healthcare costs (Beitz et al., 2010).

The following are relevant reviews and articles that illustrate peristomal skin issues. Salvadelana (2008) reviewed 21 studies that evaluated the incidence of stoma and peristomal skin issues. She listed the most common types of complications based on her review: retraction, hernia, prolapse, peristomal skin problems, and necrosis.

Recalla et al. (2013) published a systematic review on ostomy care and management. They found out that the highest peristomal skin complication rates were from irritant dermatitis as a consequence of leakage and irritant dermatitis from the skin barrier, also known as wafer, being cut too large by either the patient or caregiver, erosion of the skin barrier or undermining. Similar findings were also seen in a survey of 89 nurses in the United Kingdom. Most of the respondents in this study, 86% of the 89, held a stoma-related qualification. The nurses reported that the most common complication was sore skin (55% response rate), and the causes were from leakage of ostomy appliance (61%) and poorly fitting appliance (44%) (Burch, 2014).

Ratliff's (2010) study had 12 WOC nurses evaluate 89 patients with colostomy, ileostomy or urostomy (ileal conduit) over a 12-month period. 42 or 47% of the patients

developed peristomal complications—irritant dermatitis, mechanical injury, Candida infection, allergic reaction, or pyoderma gangrenosum.

Ratliff, Scarano and Donovan (2005) noted in their study of 220 ostomy (fecal or urinary) patients that 13% of them developed peristomal skin issues. The issues identified are mechanical, chemical, infection or allergic response.

In Salvaladena's (2013) study, 27 or 63% of the 43 adult participants developed peristomal complications. The issues occurred during the 21 to 40 day time period following surgery. The most common skin issues were peristomal moisture-associated skin damage and infection.

Pittman et al. (2014) had 71 ostomy patients in their study. 52 or 84% of the participants reported at least one ostomy complication in the first 60 days after surgery. Common complications reported were leakage (60%), peristomal moisture-associated dermatitis (50%), stomal pain (42%), retraction (39%), and bleeding (32%).

Meisner et al. (2012) discussed the DialogueStudy which was published in 2011. There were 3,017 patients from 18 countries in this study. The Ostomy Skin Tool or OST was used as the assessment tool. The findings revealed that 1,742 or about 60% of the participants developed peristomal skin complications or PSC as it is referred to in this study.

Meisner et al. (2012) interviewed eleven experienced stoma care nurses. Using the data from the DialogueStudy and the information the authors gathered from the interviews, they were able to estimate the costs based on a seven-week treatment period. Care of patients with PSCs cost 263 euros compared to only 215 euros for those patients without PSCs. The authors used France for cost reference because in France, the cost of appliances is independent of the manufacturer.

The following studies discuss nurses and ostomy care. Gemmill et al. (2011) surveyed 21 oncology nurses to assess their knowledge and attitude about ostomy care. Thirty percent of the respondents stated that they do not care for ostomy patients enough to keep up their skills. Even among CWOCNs, a survey of the members in 2012 revealed that only 22% of their time is dedicated in providing ostomy care (WOCN, 2012).

Moore, Grant, and Katz (1998) included 70 nurses (45 acute care nurses and 25 home health nurses) in their study. Their findings reveal that the nurses who received more in-services regarding ostomy care perceived that they had high competence levels as well as positive perception of ostomy patients.

A study in Ankara, Turkey by Duruk and Uçar (2013) included 100 nurses working in the acute care setting. The non-specialty nurses have low levels of knowledge regarding ostomy care compared to the specialty practice nurses. These nurses also did not perceive ostomy care to be their responsibility.

Bales (2010) conducted a training program in an acute care facility in the Midwestern United States. She trained nurses using a computer-based ostomy training resource that she created. It focused on pouch emptying and application. The author created an evaluation tool that she used as both her pre- and post-test. The test used comprised of eight statements about providing ostomy care, which the nurses rated as 1=totally disagree to 5=totally agree. It assessed the perception of the nurses' confidence in performing ostomy care but not the knowledge nor skills on ostomy care. The results of the study revealed that after the 103 participants completed the computer-based training, their confidence in their ability to provide ostomy care increased. The author underscored that ostomy care is provided by non-specialized

nurses who are not as familiar with the state-of-the art care and products. These nurses also do not use their ostomy care skills as frequently because they do not regularly have ostomy patients.

Estabrooks et al. (2005) completed ethnographic case studies by analyzing 213 field notes, 119 interviews, and 17 focus groups. They found that the four sources of practice knowledge of nurses are social interactions, experiential knowledge, documents, and a priori knowledge. The two important sources they identified are social interactions and experience. In-service is considered a formal social interaction.

In summary, the literature revealed the following themes: ostomy patients have different needs regarding ostomy care at home; peristomal skin issues are the most common issues patients encounter at home; and non-specialized staff nurses are instrumental in helping ostomy patients but they need support and education. Nurses learn through different methods, and in-service education is one method identified in the literature.

Project Plan and Evaluation

Market Analysis; SWOT Analysis

The SWOT analysis, also known as situation analysis, is an effective tool to assess the internal strengths and weaknesses of service offering, as well as, the external opportunities and threats that could affect it (Fortenberry, 2010). SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. When formulating a SWOT analysis, a diagram including the four foci being analyzed is created. The diagram will include the 1) strengths or the positive attributes of the service offering that facilitate exchange; 2) weaknesses or the negative attributes of the service offering that adversely impact exchange; 3) opportunities—the external events and circumstances that can positively impact the service offering; and 4) threats—external events and circumstances that can negatively impact the service offering (Fortenberry, 2010).

Table 4: SWOT Analysis

Strengths	**Weaknesses**
Home health agencies desire to give good care to their patients The intervention will be done in the agencies at a time and date chosen by the agencies Ostomy care is important for home health nurses to learn This author has a public blog, and gave out memory sticks, and hard copies of the educational intervention and relevant topics that the agencies can access	The educational intervention or the in-service will be on a workday—nurses have many things on their minds The in-service is only one hour and there may be many questions that cannot fit in one hour
Opportunities	**Threats**
Early discharge in the hospitals and facilities mean that most of the ostomy education must occur at home Competition among home health agencies mean the nurses have to increase their competencies and know about different patient cases e.g. ostomy care Increase in number of elderly patients in the community setting The drive for the hospitals to have less readmissions require that home health agencies be efficient and reliable so as to help decrease unnecessary rehospitalizations	In-service may be on a busy day for the nurses There may be traffic on that day which will cause nurses to arrive late in the facility In-services done by other providers such as ostomy product vendors

Driving, Restraining, and Sustaining Forces

The driving forces in this current project are: the current trend of early discharge and increasing popularity of home health care mean increase number of home health patients. Home health agencies also care for sicker patients at home. With the drive for hospitals to decrease their readmission, having reliable and efficient agencies caring for patients at home will be

helpful in decreasing rehospitalizations. Another driving force is that home health nurses also need to increase their knowledge in caring for different patients.

The restraining forces, on the other hand, include: with the home health nurses' busy schedules, the in-service will mean time away from patient care. Home health agencies also pay their staff to attend in-services.

One of the sustaining forces in this project is the need for continuing education and training of nurses as professionals. To sustain the intervention, a blog will be provided as well as the author's contact information. The blog will also be a useful reference for the nurses to use. As it is a public blog, other professionals and even patients can access it. If there is a demand for more classes, LMC's Education Department as well as its case management department can sponsor further training. This author can do further educational programs through LMC, if needed.

Budget, Resources, and Sustainability of the Project

This author will need a laptop, projector, and screen. This author already has two laptops. She purchased a new screen and a new projector. The other supplies included: food and drinks for the home health agencies; memory sticks and hard copies of materials, demographic sheets, and copies of the tests; folders and mailing expenses. The budget is outlined in Appendix F.

As for the time investment, this author prepared a blog related to the in-service. There is also time invested on preparing the in-service and providing the in-service. For the participants, the home health nurses will spend time attending the in-service.

The ostomy supplies were donated by ostomy manufacturers and former ostomy patients. However, if the author needs to buy supplies, the following table shows the cost estimate. The

products in the table are based on the price posted by Amazon.com, a leading US online retailer. The products are mostly Hollister, which LMC uses. The only product in the list that is from Smith and Nephew are the No Sting Skin Preps which LMC also uses. There will be 3 sets of ostomy skin barriers and pouches to be used, one for the author to use and the two for the participants to pass around. The belt and the ostomy powders may be used in different home health agencies. The belt can be shown and its use demonstrated. The bottles of ostomy powder have multiple doses.

Table 5: Ostomy Supplies and their Costs

Products	**Costs**	**Number of products needed**	**Total**
Hollister cut-to-fit flat skin barrier 57 mm Product number 14203	$15 for a box of five	Total of six boxes needed for 30 pieces.	**$90**
Hollister convex cut-to-fit skin barrier 57 mm Product number 14403	$32 for a box of five	Total of six boxes needed for 30 pieces	**$192**
Hollister drainable fecal pouches 57 mm Product number 14403	$38.90 for a box of ten	Total of three boxes needed for 30 pieces	**$116.70**
Hollister urostomy pouches 57 mm Product number 18143	$44.09 for a box of ten	Total of three boxes needed for 30 pieces	**$132.27**
Hollister 2 inch ostomy ring	$37.50 for a box of ten	Total of three boxes needed for 30 pieces	**$112.50**
Hollister Adapt ostomy powder Product number 7906	$16.10 for a bottle	Total of three needed	**$48.30**
Smith and Nephew No Sting Skin Preps	$12.35	The box has 50 pieces and with only 30 needed, one box is sufficient	**$12.35**
		Total	$704.12

Feasibility/Risks/Unintended Consequences

The in-service education was a feasible task to undertake. Most home health agencies try to have an in-service when the employees meet or when they collect their paycheck from the agencies. The challenges of this author included timing the in-services and providing it in the one-hour period allotted. The home health nurses do not work in the offices where the in-services were held. They are usually out in the field and therefore, the in-services had to be scheduled in a time and date that is convenient for them. There were cases when the nurses were distracted or had to attend to their patients and thus were unable to complete the class.

The intervention is an in-service with lecture and demonstration of the use of ostomy supplies. There are no known risks to the participants.

One unintended consequence of the in-services is the introduction of products that may be expensive for the home health agencies to purchase. Unlike large hospital systems, agencies have limited budgets and they may not be able to afford the costlier ostomy supplies and accessories. The nurses may feel frustrated that they cannot readily access these products in the home health setting. Another unintended consequence is that the nurses may demand that the agencies hire a CWOCN. The agencies may either not be able to afford to hire one on or there may not be enough CWOCNs in the community who want to work in home health or there may be no CWOCN to hire.

Stakeholders and Project Team

The project team members consist of this author, her capstone chair, MaryJo Coast, PhD, RN, her mentor, Jisibelle Tizon, MSN RN ACNS-BC CCRN CWON, and the other CWOCNs of the hospital system that owns LMC. The team members reviewed the presentation and the test

(one test to be used both as pre- and post-test). The capstone chair worked closely with the author to help with the IRB approval.

The stakeholders are the home health agencies and their nurses (LPNs and RNs), the ostomy supply manufacturers' representatives—Hollister, Convatec and Coloplast, and the patients and their families. A vendor from a durable medical equipment company also helped this author recruit participants. The WOCN Society is also a stakeholder in this project. The author hopes to publish her findings in the WOCN journal.

Cost-benefit Analysis

Jones (2014) noted that the average Medicare inpatient admission costs for the hospital is $2,000 per day. For long term care, the cost is $559 per day and for home health it is $44 per day. With the cost of home health much lower, there is a strong drive in the US health care environment to have patients recover and stay at home versus get admitted to health care institutions.

Caron and Isbey (2013) noted that the estimated 60-day episode payment by Medicare to home health is $2,860.20. If the patient has leakage issues from peristomal skin conditions and is seen every day, the home health is making only $ 47.67 per day on the patient. This author, when she worked in home health, was paid about $50 per patient visit. If the patient is seen daily, the agency is spending more than what it will gain financially for that particular patient. If peristomal skin complications are prevented and/or treated, the expense will be less in terms of ostomy supplies, home visits, and less dollar spending overall.

Meisner et al. (2012) also examined the care of patients with peristomal skin complications. The cost of care of patients with skin issues is about 263 euros ($336.4) compared to only 215 euros ($275.2) for those patients without peristomal skin complications.

The dollar conversion is $1.28 for 1 euro as posted on October 20, 2014 (Wall Street Journal, 2014).

Project Objectives

Mission and Vision

This author's mission is to improve care of patients in the community by providing education on ostomy care to home health nurses, with a specific focus on peristomal skin care. Her vision is to continue to be an active CWOCN at work and in the community, who will foster collaboration among clinicians and community stakeholders in order to deliver best care to wound, ostomy and continence patients, and at the same time advocate for the patients and their families as well as for home health nurses and other CWOCNs.

Goals

The goal of the project is to improve the home health nurses' knowledge on ostomy care, specifically focusing on peristomal skin care. The home health nurses were given a test—only one test will be used both as the pre- and post-test. The test is a multiple choice 10-item format on the topic of peristomal skin care. It is copyrighted by the webWOC Continuing Education Program in Minneapolis, MN and online at www.webwocnursece.com. Permission to use this test was provided by authors Debra Netsch, DNP, RN, AORN, CNP, CWOCN and Bonnie Sue Rolstad, MS, RN, CWOCN. This copyrighted test is the post-test in the Continuing Education (CE) class that is available via webWOC, an online WOCN school. The class is called *Basic strategies for managing ostomy pouching problems: Associated with peristomal skin.* The outcome in this capstone project is improvement of the scores of the participants after the educational intervention (in-service) has been provided.

The secondary goals, which will not be measured in this project because of limitation in time and resources, are: the home health nurses will be able to deliver efficient and effective ostomy care and patients will have better outcomes—better peristomal skin care, less leakage, less products used, less pouch changes needed, and reports of better patient satisfaction. The better patient outcomes will positively impact the patients—less distress and discomfort. Using less products and doing less as needed (prn) staff nurse visits to the patients' homes will decrease the costs for the home health agencies and the health system. In cases when patients have to purchase their ostomy products while being cared for by the home health nurses, the patients will also have to buy fewer products from frequent ostomy pouching system because of leaking from poor peristomal skin conditions.

Project Process Objectives

Project process objectives are about actions that are needed to be able to accomplish the goal. This project has the following objectives:

1. Provide a one-hour, evidence-based in-service to increase the home health nurses' knowledge on peristomal skin care.
2. Administer a pre-course assessment (pre-test) utilizing a published tool to demonstrate baseline knowledge of participant nurses regarding peristomal skin care.
3. Administer a post-course assessment (post-test) utilizing the same published tool to demonstrate knowledge acquisition

Outcomes Objectives

The outcome objective is the specific of the project. The outcome in this capstone project is improvement of the scores of the participants after the educational intervention (in-service) has been provided. An improvement in scores signifies knowledge acquisition regarding the topic.

Logic Model

The Kellogg Foundation (2004) illustrated the Logic Model and its components. The model shows the connection between the planned work and the intended results. It included the following items: assumptions, resources, activities, outputs, outcomes, and impacts, and influential factors either protective or risk factors that may affect the execution of the planned work.

The assumptions or the reasons behind the project are: 1) low supply of CWOCNs working in home health; 2) home health nurses need ostomy education; 3) ostomy patients spend less time in the hospital and have to be in care of the home health agencies sooner; and 4) CWOCNs are instrumental in educating home health nurses on ostomy care.

The resources are the processes, tools, and actions of the project which include: 1) home health agencies to participate in the project; 2) ostomy supplies used in the presentation; 3) venues for the presentation; 4) laptop and projector; 5) lunch for the participants; 6) handouts; 7) memory sticks with resources and other digital materials; 8) literature review in preparation of presentation; 8) other CWOCNs gave feedback on presentation; 9) time of author and agencies; and 10) travel expenses of author. On the other hand, factors that may hinder the execution of the project are unforeseen inclement weather and/or power outage during the educational intervention.

The activities in this project include contacting home health; arranging dates and venues; recruiting participants; requesting vendors for ostomy supply donations; preparation of educational presentation; requesting other CWOCNs to review the presentation and take the published test; preparing the laptop and projector; and preparing the evaluation form for the presentation as well as other documents related to the project.

The outputs are the direct results of the program activities. The presentation and demonstration, the hand-outs, memory stick with digital copies of resources, packets containing supplies for each participant, the pre- and post-test, and evaluation forms of the presentation are examples of outputs.

The outcomes are the specific changes in the participants' knowledge and skills, and improvement of the functions of the home health agencies. The intended outcome will be improved scores in the post-test after the intervention is applied. A favorable evaluation of the class is also desired as well as reports of increased nurses' confidence in delivering ostomy care. Other outcomes include decreased number of home health nurses' visits with more appropriate ostomy product selection and early intervention. Decreased patient and home health agencies expenses are also desired outcomes.

The project aims to impact the home health agencies as well as the community by fostering delivery of efficient and effective ostomy care. The community effects will include desirable patient outcomes—better peristomal skin care, less leakage, less products used, less pouch changes, and report of better patient satisfaction.

This project is a quasi-experimental, pre-test post-test design. It involved presenting an in-service education that will include a lecture and demonstration of peristomal skin care using ostomy products. The presentation will be done in different home health agencies. The advance nursing practice outcome measure being addressing is improving patient outcomes in home health. By educating nurses on peristomal skin care, the nurse will have increase knowledge and increase competence in caring for ostomy patients. When the nurses are competent in ostomy care, the patients will have better health outcomes and report higher levels of patient satisfaction.

Population and Sampling Parameters

The following formula was used to calculate the sample size, when the exact population is not known:

Necessary Sample Size = $(\text{Z-score})^2 - \text{StdDev}*(1-\text{StdDev}) / (\text{margin of error})^2$

The confidence interval or margin of error is +/-5%. The confidence level used is 95% which in the Z-score table corresponds to the value 1.96. The standard or variance allowed to expect in the responses is 0.5.

Plugging in the Z-score, Standard of Deviation, and confidence interval into this equation, the answer will be: $((1.96)^2 \times .5(.5)) / (.05)^2 = (3.8416 \times .25) / .0025 = .9604 / .0025 =$

384.16= 385 respondents are needed

This formula was derived from Smith (2013) and Walpole and Myers (1978).

385 is a large number to consider in a capstone project that only has limited resources and time, another way to calculate for a sample size is to obtain the number of Colorado registered nurses (RN) and licensed practical nurses (LPN) working in home health and from that number, identify a percentage. According to the Health Resources and Services Administration (2013), there are 43,480 RNs and 5,843 LPNs in Colorado. Nationwide, 3.8% of RNs and 6.3% of LPNs work in home health. Translating those numbers to Colorado, there are 1,652 RNs and 368 LPNs working in Colorado home health agencies, with a total of 2,020 nurses. 5% of that will be 101. Considering attrition among participants, about 150 participants was considered in this project.

Another reference that was used in determining the sample size is the study by Kao, Hsu, Hsieh, and Huang (2010). In this study, the researchers compared the effects of two different

educational interventions on knowledge and competence of nurses regarding conveying gastroscopy-related information to patients. They had 65 nurses as participants.

This is a voluntary educational opportunity. For the sample, this author has contacted a few home health agencies that are usually used by the hospital, Lutheran Medical Center, this author's employer. There were also other Denver, Colorado home health agencies which participated in this project. RNs and LPNs from select Denver home health agencies participated. The agencies included do not have a CWOCN as consultant or as employee. A convenience sample of 86 home health nurses participated in this project. This author was only able to recruit this many people. There were two home health agencies that initially agreed to participate but then later decided against it.

The inclusion criteria for the participants were: 1) they must be home health nurses from agencies that have no CWOCN as consultants or employees; and 2) they can be LPNs or RNs from home health agencies LMC often uses or agencies in the Denver area. On the other hand, the exclusion criterion is that the participants must not be CWOCNs, or WOCNs (not yet certified—has not taken the board exams for CWOCNs).

Setting

The in-services were held in various Denver home health agencies. The agencies serve adult and older adult populations.

Design Methodology and Measurement

This quality improvement project is a quasi-experimental, pre-test post-test design. There was one group of nurses who participated in the study. Descriptive statistics were used to analyze the demographic data (frequency, percentage, and mode). The data from evaluation

form were also analyzed using descriptive statistics (frequency and percentage) as well as searching for themes in the two open-ended questions in the evaluation form.

Descriptive statistics were used to analyze the test scores. The frequencies of the scores pre- and post-test were tabulated and graphed using a line graph. Inferential statistics was used to analyze the test scores. The t-test for dependent groups was used to compare and pre- and post-test. The t-test was also used to compare the cumulative scores of all the respondents per question. There were ten questions and for each question, the number of respondents (in percentage) correctly answering the questions pre- and post-intervention was compared.

Human Rights Protection

The intervention is an in-service with lecture and demonstration of the use of ostomy supplies. There are no known risks to the participants.

This is an exempt study as per the Regis Internal Review Board (IRB) (Regis University, 2011) statement:

> (2) My research will involve the use of educational tests (cognitive, diagnostic, aptitude and achievement), survey procedures, interview procedures, or observation of public behavior. The information obtained will not be recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) no disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

The home health agencies are small organizations and do not have their own IRB. The Regis IRB will be consulted to approve the project. The IRB approval is in Appendix H and this author's Collaborative Institutional Training Initiative or CITI certification is in Appendix I.

Instrumentation Reliability/Validity of Findings

Internal validity is the "ability to infer that the independent variable in a research project is truly related to the dependent variable. A threat to internal validity means there are competing explanations for the results obtained in a research project" (Terry, 2012, p. 80). In this project, the threats to internal validity are:

1. Selection—precautions must be taken to ensure that the members of the sample population are home health nurses. For example, if there is a CWOCN in the group, he/she must be excluded as he/she likely knows the content of the material and is not representative of the sample that this author is targeting.
2. History—a specific event either inside or outside the setting that may affect the test result. An example of this is prior attendance of the home health nurses to a similar lecture. This is beyond the control of this author as the nurses have varying years of experience. It is possible that some of them have either heard a similar lecture or have taken an online course regarding the topic at some point in their career.
3. Maturation—this relates to changes in the aging process that participants may experience over the course of time. In this project, the more experienced nurses may have more knowledge and skills on ostomy care compared to the newer nurses.
4. Testing—the experience that the participants have with the pre-test may affect the post-test. For example, they may answer the questions correctly as they already had encountered the test questions before. This author changed the order of the questions as well as the order of the choices for the answers in the pre- and post-test.

5. Instrumentation—in this project, a previously published test was used and is not likely to change during the duration of the project execution.

External validity refers to the generalizability of the results. It refers to whether the results are specific to the population or are the results also applicable to others (Terry, 2012). In this case, the intervention and the test are applicable to registered nurses and licensed practical nurses in any clinical setting in the United States. The ostomy care terminology and the ostomy products used in other countries may be different and therefore, the test as well as the educational intervention may not be applicable in other countries.

Reliability refers to the consistency of the instrument, whether it is measuring what it is supposed to measure (Polit, 2010). In this project, pre-/post-test is the instrument. The variable being measured is the nurses' knowledge regarding peristomal skin care. Participant test scores will be evaluated with anticipation of improvement in the post educational intervention on peristomal skin care. The test that will be used to evaluate the nurses' knowledge is a published quiz created by two instructors in webWOC, an online school that trains nurses to become CWOCNs. It is a part of an online continuing education unit (CEU) class offered in the webWOC website. This has been administered to other nurses in the past. The test was content validated by at least five CWOCNs who work for the SCL hospital system.

Data Collection and Treatment Protocol

These procedures were followed: Regis University's Internal Review Board reviewed the project. The author prepared the materials for the in-service intervention. The author approached, informed, and obtained permission from selected home health agencies. Flyers with information about the project were sent to home health agencies to help recruit volunteer RNs and LPNs as participants. This author set dates and times with different home health agencies. Home health

agencies stated the preferred time and date. The author then went to the different home health agencies to conduct the in-services. Attendance to the in-service is voluntary and the administrators as well as participants were fully informed about this. The agencies were informed that if there are nurses who missed the in-service and if they would like to hear the presentation, this author will come back at another date to do the in-service again. If the request comes after this author's submission of her final paper related to this project, the nurses will not be included in the study and the test will not be administered.

Food and drinks were provided to the participants during the in-services. There were agencies that decided to provide their own food. The presentation was done in different agencies. The presentations as well as the test were reviewed by a panel of CWOCN experts who work for the Sisters of Charity of Leavenworth Hospital System (SCLHS) who owns Lutheran Medical Center (LMC), this author's employer. One non-CWOCN, RN also reviewed the presentation.

The pre- and post-test that was administered is one test. This was created by Debra Netsch, DNP, RN, APRN, CNP, CWOCN and Bonnie Sue Rolstad, MS, RN, CWOCN. The authors approved the use of this test in this project.

The intervention was an in-service, and the administration of the pre- and post-test was used to evaluate the intervention. The learning objectives were: 1) Describe how to do routine peristomal skin care. 2) Identify peristomal skin characteristics that complicate pouching system success. 3) Identify causative factors, clinical features, and prevention/intervention measures for each of the following: a) contact dermatitis; b) folliculitis; c) fungal "yeast" dermatitis; d) mechanical injury; and e) mucocutaneous junction separation. 4) Identify factors in selecting a pouching system for an individual patient.

The following steps were done in executing this project: 1) the in-services were provided to specific home health agencies. There was one in-service session per agency. 2) The author informed the participants that their anonymity will be protected and that participation is voluntary. She informed the potential participants verbally and by giving them a letter of explanation regarding the study. Participants can choose not to participate or terminate participation at any time during the course of the in-service or testing. A letter of information and consent forms were given to the agencies to hand to the participants a week or two ahead of the in-service. The letter informed them about the study and that the study is voluntary. It contained the contact information of the author. The participants were informed that their work status will not be affected if they decide not to participate and that their employer will have no knowledge of participation. The results are confidential and will remain anonymous. The results of the tests, the information in the participants' demographic information sheet, and the evaluation of the presenter and the in-service will not be shared with any other person or agency. All data will be kept in a locked secured box off site of the home health agencies. All electronic analysis will be password protected and kept locked. 3) The author introduced herself to the participants (RNs and LPNs) during the in-service. 4) Participants filled out a demographic sheet and then answer the pre-test questions. 5) In-service education was conducted using a PowerPoint presentation, hard copies of related materials, and demonstration of use of ostomy supplies. 6) After the in-service, participants were asked to answer the post-test questions which are the same as the pre-test questions. There was an evaluation of the in-service—evaluation of presentation, relevance of topic, and presenter. 7) Author reviewed the correct answers with the participants. 8) Author gave the home health agency a memory stick containing relevant materials as well as the hard copy version of the materials. 9) Author gave the home health

agency and the participants a blog site the author created that have her contact information and other related materials regarding the in-service. The blogsite address is http://earlamperistomalskincare.blogspot.com/2014/11/about-this-blog.html. 10.) Author thanked the participants for their time.

The data were analyzed using descriptive and inferential statistics. Statistical Package for the Social Sciences or SPSS version 23 and Excel 2010 were used to tabulate and analyze the data.

Statistical Analyses

Cohen (1992) and Polit (2010) both listed the four components of power analyses: 1) significance criterion; 2) power; 3) the population size effect; and 4) sample size. Both authors stated that significance criterion (α) is typically 0.5. This is commonly used for type I error. For type 2 error, 0.2 or the minimum power of 0.8 is often used.

Polit (2010) stated that researchers estimate the effect size to solve for sample size. She cited an example using Cohen's guidelines, as per her book, Table B.1 in page 421. She used the Cohen d of .35, and with an α of 0.5 and a power of .80. The sample size of 129 was obtained. Per Cohen's guidelines the vicinity of 0.35 effect size will give a small-to-moderate effect while an effect size of 0.80 is considered large (Polit, 2010).

Descriptive statistics were used in the data presentation and analysis. The inferential statistics used in this project was the dependent groups t-test, two-tailed. The scores in the pre- and post-test were compared using the t-test. The t-test was also used to compare the cumulative scores of all the respondents per question. For this study, the significant criterion selected was .05 and the power used is 0.8.

Project Findings and Results

Objectives

The project process objectives are:

1. Provide a one-hour, evidence-based in-service to increase the home health nurses' knowledge on peristomal skin care.
2. Administer a pre-course assessment (pre-test) utilizing a published tool to demonstrate baseline knowledge of participant nurses regarding peristomal skin care.
3. Administer a post-course assessment (post-test) utilizing the same published tool to demonstrate knowledge acquisition

The outcomes objective is to increase the knowledge of the nurse participants regarding ostomy care as shown by an increase in mean scores comparing the pre- and the post-test. The number of participants, expressed in percentage, getting the correct answers per question, pre- and post-test was also compared. An increase in percentage of participants correctly answering each question, when compared to the pre- and post-intervention assessments, demonstrates a knowledge acquisition regarding the peristomal skin care.

Demographics

There were 86 participants (N=86). 85% were RNs (n=73) and 15% LPNs (n=13). 37% of the respondents have a Bachelor's degree in Nursing (n=32), and 43% have an associate's degree (n=37). Most of the participants are female, 94% (n=81). Most of them are RNs working in the field (n=54, 63%). There were 35% (n=30) who are in the age bracket 41-55. This is the most represented age bracket among all the respondents.

Among the LPNs, 6 or 46% of them reported that they have worked as an LPN for over 15 years. Among the RNs, 30 or 41% have worked as a RN for over 15 years. In the category of

years worked, the over 15 years have the highest percentage compared to other categories. When asked how long they had been working in home health, 15 or 17% of them said less than one year, 25 or 29% said one to five years, 18 or 21% report five to ten years, 11 or 13% said ten to 15 years, 15 or 17% said over 15 years, and two or 2% did not respond to this demographic question.

When asked if they have worked with a patient, family member, loved one, or friend with a colostomy, ileostomy or urostomy, 91% of them (n=78) said yes. When asked if they themselves had or have an ostomy/ies, only one participant said yes.

The summary of the data from the demographic form are in Appendix N.

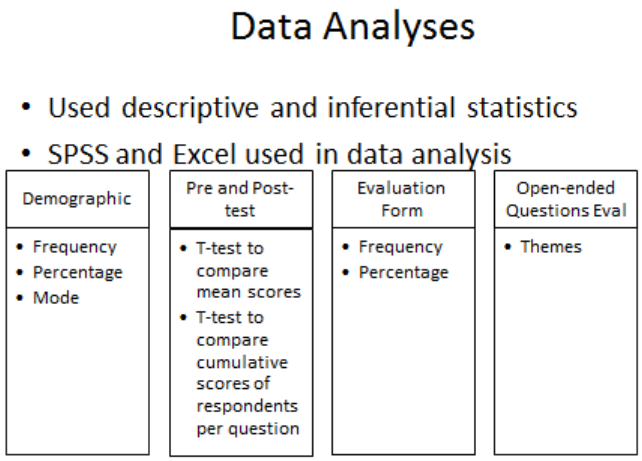
Data Analyses

Statistical Software

Microsoft Excel 2010 and SPSS 23 were used in the data analysis. Excel is an application that is used for reviewing, updating, and creating spreadsheets (Microsoft, 2015). SPSS 22 is a software package used for statistical analysis. It is a product of IBM (IBM, 2015). Excel was used to organize the raw data into an electronic format. It was also used to create tables and graphs to organize the demographic data. It was used to calculate for frequencies and percentages in the analyses of the demographic data and the data from the evaluation form. SPSS was used to analyze the mean scores of the participants and to run the inferential statistics. A paired sample, dependent groups t-test was used to compare the pre- and post-test scores of all the participants. SPSS was also used to compare the number of respondents correctly answering each question, pre- and post-intervention. To compare the scores and to compare the number of respondents correctly answering each question, pre- and post-intervention, SPSS was used to do the calculations using the paired-samples t-test of dependent groups.

The data analyses methods are summarized in the figure below.

Figure 1: Data Analyses



Effect Size

The significance criterion or α is typically .05. This significance level means that the values observed would be found by chance by only five times out of 100. This is used by scientists as a standard for Type I error. Type I error means an error created by rejecting the null hypothesis when it is true (false positive). A minimum power of .80 was chosen as a standard for a Type II error. Type II error is an error created by accepting the null hypothesis when it is false (false negative). .80 means that 80% of the time the experiment will detect a difference between the control and experimental groups if a difference actually exists (Polit, 2010).

The effect size is the statistical expression of the magnitude of the difference between groups. The effect size may be calculated using the Cohen's d formula, also called as the standardized mean difference. It is calculated by subtracting the means of two groups and dividing it by the pooled standard deviation (Polit, 2010). In this study, the two means are the average scores of all the participants in the pre- and post-test.

This author calculated the pooled standard deviation using the calculation as defined by the Cohen d formula. The value obtained was .176. The means of the scores in this study were .5267 (pre-test) and .7791 (post-test). To calculate for the Cohen d or the effect size, subtract .7791 from .5267. The result will be -.2524, which will then be divided by .176 (pooled standard deviation). The Cohen d is -1.43. The absolute value of -1.43 is higher than 0.8. Cohen's criteria states that the two-group mean difference is large if the number is .80 or above (Polit, 2010). The Cohen d in this study means that the intervention has resulted in a significant difference between the two scores. In this study, the scores showed improvement when comparing the pre- and the post-test means.

Coding the Data

The participants were assigned with random numbers 1, 2, and so forth when they were handed folders with the handouts. The folders given to the participants were numbered and so were the forms in them: the demographic survey form, the pre- and post-test, and the evaluation form. The participants were informed not to put any identifying marks on their folders and forms, example no names, no agency name, and no initials so as to assure anonymity.

Each question in the demographic form was numbered Q1 to Q 9. The responses to the demographic questions were given codes 1, 2, 3, 4 and so forth. For the pre-test, the questions were numbered Q10A to Q19A, and Q10B to Q19B for the post-test. There were short texts after the coding of the questions. The text such as "powd" after Q13A/B, for example, is a code this author created to summarize the content of the question. "Powd" was the code for the question related to the use of ostomy powder, for example. When checking the answers, the correct responses of the participants were given a code of 1 and the incorrect ones were coded 0.

The answers to the evaluation forms were not coded. The information in the evaluation form was tabulated in Excel. The responses were tabulated in a frequency table and the percentages were noted. To illustrate, the number of participants who rated the speaker "Excellent" in preparation and knowledge of topics, were counted and the percentage calculated.

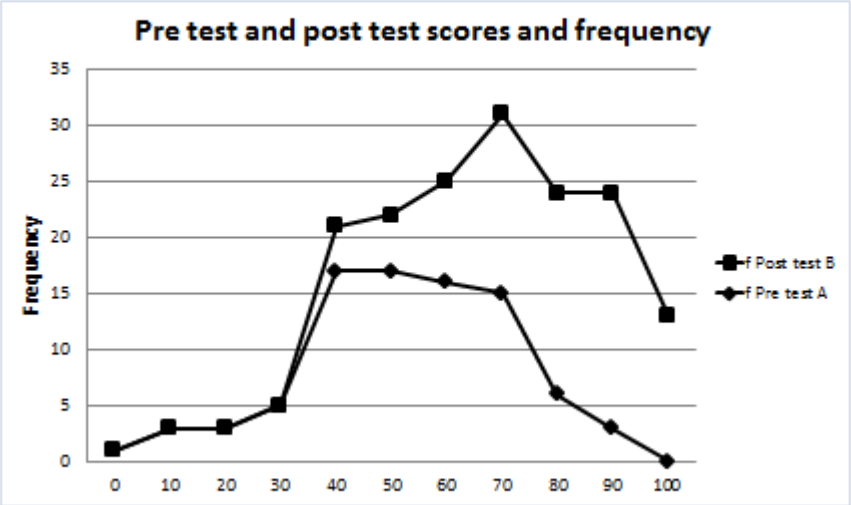
Pre-test and Post-test Scores and Frequencies

The table below summarizes the scores of the participants and how many of them were in each category. The frequency and percentage of the participants falling in each category are in the second and third columns, pre- and post-test respectively. The number of participants obtaining higher scores increased in the post-test. The table and the graph are shown below.

Table 5: Frequency and Percentage of Scores

Scores	**Frequency and Percentage of Scores Pre-test (A) N=86**	**Frequency and Percentage of Scores Post-test (B) N=86**
0%	**1, 1%**	**0, 0%**
10%	**3, 3%**	**0, 0%**
20%	**3, 3%**	**0, 0%**
30%	**5, 6%**	**0, 0%**
40%	**17, 20%**	**4, 5%**
50%	**17, 20%**	**5, 6%**
60%	**16, 19%**	**9, 10%**
70%	**15, 17%**	**16, 19%**
80%	**6, 7%**	**18, 21%**
90%	**3, 3%**	**21, 24%**
100%	**0, 0%**	**13, 15%**

Figure 2: Pre-test and Post-test Scores and Frequency



Inferential Statistics

The question in this quality improvement capstone project was: "will an in-service education focusing on peristomal skin care provided by a CWOCN improve the knowledge of home health nurses?" A dependent-samples t-test was conducted to compare the pre-and post-test scores of the participants. The test was administered before and after the intervention (in-service). There was a significant difference in the pre- and post-test scores, pre-test (M=.5267, SD=.19062) and post-test (M=.7791, SD=.16458); t (85) =-9.521, p<.001. The alpha value of p=.05 was chosen as the significance level. This study shows a statistically significant result with p <.001. The t is -9.521, the absolute value of which is more than 1.96 (tabulated t-value). Cohen d effect size is -1.43. Any number with an absolute value above 0.8 for Cohen d means that the effect is large. The 95% confidence interval value for the mean difference between the two scores was -.30502 to -.19963. The results demonstrate that the in-service provided by the

CWOCN, the author did increase the knowledge, as measured by comparing the pre- and post-test scores.

The figure below summarizes the SPSS calculation of the means, standard deviation, and the t-test calculation.

Figure 3: SPSS Output: T-test Result of the Scores

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest A	.5267	86	.19062	.02055
	Posttest B	.7791	86	.16458	.01775

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	PretestA - PostTestB	-.25233	.24578	.02650	-.30502	-.19963	-9.521	85	.000

Comparing the cumulative correct answers per question, more participants correctly answered each of the question in the post-test compared to the pre-test. Refer to the table below. The means represent the percentage of participants getting the correct answers. The A results are the pre-test results, while the B results are the post-test results. Note that the means in the post test (B) are higher the means of the pre-test (A).

Figure 4: SPSS Output: Paired Samples Statistics for Each Question

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Q10Astrip	.43	86	.498	.054
	Q10Bstrip	.72	86	.451	.049
Pair 2	Q11Aretr	.41	86	.494	.053
	Q11Bretr	.69	86	.467	.050
Pair 3	Q12Artprd	.41	86	.494	.053
	Q12Brtpro	.90	86	.308	.033
Pair 4	Q13Apowd	.57	86	.498	.054
	Q13Bpowd	.79	86	.409	.044
Pair 5	Q14Acres	.85	86	.360	.039
	Q14Bcres	.93	86	.256	.028
Pair 6	Q15Aseal	.26	86	.439	.047
	Q15Bseal	.55	86	.501	.054
Pair 7	Q16Afirm	.53	86	.502	.054
	Q16Bfirm	.81	86	.391	.042
Pair 8	Q17Aremov	.48	86	.502	.054
	Q17Bremov	.81	86	.391	.042
Pair 9	Q18Achar	.55	86	.501	.054
	Q18Bchar	.57	86	.498	.054
Pair 10	Q19Atopo	.74	86	.439	.047
	Q19Btopo	.95	86	.212	.023

The p values, except for pair 5 (question 5) and pair 9 (question 9) are all statistically significant with values of $p < 0.05$. The desired absolute value for the t statistic with degrees of freedom or df 85 is 1.96 or above. All the pairs, except for pair 9 had a t-statistic value greater than 1.96. See the following table.

Figure 5: SPSS Output: T-test Results for Each of the Questions

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Q10Astrip - Q10Bstrip	-.291	.630	.068	-.426	-.156	-4.279	85	.000
Pair 2	Q11Aretr - Q11Bretr	-.279	.644	.069	-.417	-.141	-4.016	85	.000
Pair 3	Q12Artprd - Q12Brtpro	-.488	.503	.054	-.596	-.381	-9.008	85	.000
Pair 4	Q13Apowd - Q13Bpowd	-.221	.621	.067	-.354	-.088	-3.298	85	.001
Pair 5	Q14Acres - Q14Bcres	-.081	.382	.041	-.163	.001	-1.974	85	.052
Pair 6	Q15Aseal - Q15Bseal	-.291	.648	.070	-.430	-.152	-4.158	85	.000
Pair 7	Q16Afirm - Q16Bfirm	-.279	.546	.059	-.396	-.162	-4.743	85	.000
Pair 8	Q17Aremov - Q17Bremov	-.337	.566	.061	-.459	-.216	-5.526	85	.000
Pair 9	Q18Achar - Q18Bchar	-.023	.573	.062	-.146	.100	-.376	85	.708
Pair 10	Q19Atopo - Q19Btopo	-.209	.463	.050	-.309	-.110	-4.191	85	.000

For question number 5 in the pre-test, 85% of the participants correctly answered it. In the post-test, 93% of the participants correctly answered it. The difference was 8% more of them correctly answering it in the post-test.

For question number 9, in the pre-test, 55% of the participants answered it correctly. In the post-test, 57% answered it correctly. The difference of 2% is small. This may be because of the following reasons: 1) the author may not have explained this concept clearly; 2) the participants were divided in their choice of the correct answer; or 3) the question and the choices were not clear to the participants.

Data from the Evaluation Form

The majority of the participants say that the objectives of the in-service were fully met. The majority of the participants say that the topic is of interest to them (excellent=61, 71%), that the in-service provided new information (excellent=74, 86%), and that the in-service is applicable to clinical practice (excellent=64, 74%).

The evaluation of the speaker (this author) was also favorable. 78 or 91% rated the speaker excellent in preparation and knowledge of topics. 73 or 85% rated the speaker excellent

in terms of being easy to understand and 78 or 91% rated the speaker excellent in terms of responsive to questions.

There were two open-ended questions in the evaluation. The two open-ended questions in the evaluation form were about the strong/weak points of the presentation and what will the participants do differently as a result of the presentation. The answers of the participants were read one by one and reviewed for common themes that emerged. These themes were noted: the speaker was knowledgeable, and well-prepared. The presentation was informative.

Information regarding crusting method as a treatment for peristomal skin denudation was good information, as noted by four participants. Six participants stated that they will be more confident in delivering ostomy care. Five appreciated the information about the different products.

Discussion

When the mean scores of the participants were compared pre- and post-test, the results were statistically significant. After the intervention, the post-test scores are higher, which indicates nurses gained knowledge regarding peristomal skin care. When comparing how many participants correctly answered each question, in the post-test there were more participants correctly answering each question. The results indicate that the in-service given by the CWOCN improved the knowledge of the home health nurses regarding peristomal skin care. The study does not examine the impact on the patients. It will be ideal to conduct further studies on the effect of the nurses' education in delivering ostomy care.

The data from the evaluation form indicate that the nurses find it useful to learn more about ostomy care. In-service is one method of educating the home health nurses. There are other ways of educating nurses such as online classes, training at the patient-side, in the patients'

home, and telephonic or other means of virtual consultation with an ostomy expert, for example. These other methods may be employed depending on the learning needs of the nurses as well as what may be convenient or useful for them to access.

The author created a blog containing the same information as the in-service which nurses can refer to at any time as long as they have Internet access. It will also be valuable to investigate how this blog or similar tools are used, if at all, at the point of patient care.

Limitations

The limitations noted in this study are as follows: no measure of long-term impact on patient outcomes; limited time period for data collection; and only a few Denver area home health agencies were included. The class was short and given during the break or lunch time of the staff. There were some participants who came in later in the presentation and this author had to interrupt the class and explain the process to the latecomers. There were some participants who had to leave and were unable to complete the class. There were some participants who were distracted because the class was conducted during the work day and they attended to work-related tasks such as answering telephone calls. Lastly, the tool (pre- and post-test) is not a standardized test. The ten item test used is a short test. The participants' scores may be vastly different by just missing one item.

Recommendations

Recommendations include conducting further studies or inquiry. Use of a standardized test in assessing knowledge regarding peristomal care is also recommended. Currently, to this author's knowledge, no test like this exists.

The class can also be offered as a two-hour class with the home health nurses meeting in a single venue. The class can also be offered in other settings across the healthcare care continuum such as acute care, long-term care, and skilled nursing facilities.
Conducting a self-efficacy test on the nurse participants may also be useful: did they feel more confident caring for ostomy patients after the intervention (in-service)?

Studies that explore the relationship of distraction, experience, education, and other factors as they relate to the scores are warranted. And lastly, it will be ideal to investigate the impact of the nurses' education on the patients. Did the patient outcomes improve after the nurses' education?

Implications for Change

The project ultimately aims to help ostomy patients. It is meant to impact nursing practice on the patient level. The project also helped emphasize the importance of supporting the education of home health nurses. The following were also highlighted: 1) the need for ostomy care education of home health nurses; 2) the importance of educating the home health nurses working in the field; 3) the importance of educating the managers/administrators of the home health agencies. They are usually asked by the staff for guidance regarding ostomy care; and 4) the valuable role of a CWOCN as an expert in ostomy care.

Conclusion

Chism (2013) highlighted the important role of the DNP in evaluating evidence-based practices for care, delivering care and solving healthcare dilemmas. Knowledge deficit regarding peristomal skin care by the home health nurses affect the patient's quality of life, patient satisfaction, adjustment to the stoma, and effective rehabilitation. To address this dilemma, this

project involved educating select home health nurses to equip them with knowledge and skills in caring for the ostomy patients.

Patients who are discharged from the hospital may not have the support of a CWOCN as there are only very few CWOCNs who work in the home setting. When the patient is discharged home, they are more ready for ostomy education. They are not on intravenous pain medications that contribute to sleepiness and lower attention span. The time at home, with their family and loved ones, presents a good opportunity for the home health nurse to assist in the patients' rehabilitation. The home health nurses' role is very crucial. The home health nurse's ability to care for and educate these patients is critical in helping them become more independent of ostomy care as well as become better adjusted to living with an ostomy.

The role of the CWOCN in educating staff nurses on ostomy care was underscored in this capstone project. The purpose of this project was to evaluate if an in-service education focusing on peristomal skin care provided by a CWOCN improve the knowledge of home health nurses.

The findings of this project suggest that there is an increase in knowledge related to peristomal skin care after the in-service, based on improved test scores and the increased number of participants getting the correct answers per question comparing the pre- and post-test results. A statistically significant improvement in mean knowledge scores was noted in the post-intervention assessment using a paired samples t-test of dependent groups. The results suggest that educational intervention was successful in increasing nurses' knowledge on the topic.

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Appendix A: Literature Review

Article/Journal	What Do Surgical Oncology Staff Nurses Know About Colorectal Cancer Ostomy Care? *Journal of Continuing Education in Nursing*	Follow-up care of stoma patients: A systematic literature review. Gastrointestinal Nursing
Author/Year	Gemmill, R., Kravits, K., Ortiz, M., Anderson, C., Lai, L., & Grant, M. (2011).	Johnson, T. (2012).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care, colorectal cancer	CINAHL, Medline, PubMed/follow up care, ostomy care
Research Design	Mixed-method descriptive study design	Systematic literature review
Level of Evidence	Level 6	Level 5
Study Aim/Purpose	To assess oncology staff nurses' knowledge and attitude toward ostomy care.	To evaluate literature from 1990 to the time the author wrote the article regarding follow up care for stoma patients.
Population/Sample size Criteria/Power	Convenient sample using 21 oncology nurses/ No power cited	The author cited 25 articles but did not elaborate how many where qualitative and quantitative/No power cited
Methods/Study Appraisal Synthesis Methods	Survey of Ostomy Care questionnaire given to convenient sample population, open-ended questions were asked and answers were analyzed for content	This systematic literature review included articles printed in English, from 1990 to the time the author wrote the article. The key search terms she used are: follow-up care of stoma patients, stoma care rehabilitation, community stoma care nursing, discharge planning, physical, psychological and social stoma complications, and nurse-led stoma clinics
Primary Outcome Measures/Results	30% of staff nurses strongly agreed or agreed that they do not care for ostomy patients often enough to keep up their skills. Staff surveyed identified that patient's emotional adjustment	The author cited that there is limited research on timing, duration and length of follow up after ostomy surgery. The new ostomist is at risk for complications post-operatively and hence, follow up is

	after ostomy surgery is a barrier in educating the ostomy patients.	critical. The follow up varies from place to place depending on the availability of a nurse specialist in the area. Note that this review is from the UK and the specialist referred to is a Clinical Nurse Specialist (CNS). There are ostomists in the community who encounter problems related to their ostomies but they do not consult anyone for help.
Conclusions/Implications	There is a need to explore ways on how to do ongoing staff education on low-volume patient population, example clinical simulation and short videos. Note: In this systematic literature review table, the words "ostomates" "ostomists" and "ostomy patients" are used interchangeable. "Ostomates" is the term used in most North American literature when referring to patients with incontinent ostomies be they fecal or urinary. "Ostomists" mean the same; the term is common in literature from the UK.	The literature review points to the paucity of research on ostomy care especially regarding follow up after surgery. The author advocates for further investigation regarding post-operative follow up.
Strengths/Limitations	Strengths—the study gave a detailed explanation of the survey questionnaire used. Limitations—the study used a small number of subjects that were conveniently sampled.	Strengths—the review highlights an important practice issue: follow up care of ostomy patients. It summarized new and older studies done regarding the topic. Limitations—the article would be clearer if the author spelled out how many qualitative and quantitative studies were examined, how she came up with these studies

		to review based on inclusion and exclusion criteria (which were not explained either), and a summary table of the highlights of each study would be helpful.
Funding Source	None disclosed	None disclosed
Comments	This is a 2011 study but it cited 1993 and 1998 articles. This literature as well as other literature reviewed support the call for more research regarding ostomy care. The capstone project will be useful in adding to this knowledge. This study points out to an issue common in health agencies such as home health and hospitals—ostomy patients tend to be a low-volume population. Nurses would see a few of them and then weeks or months would go by without having any ostomy patients in the care of the nurses. The staff do not care often enough of ostomy patients to keep up their skills.	This 2012 review had 25 articles regarding the topic. 3 are from the 90s and 2 are from the 80s. The article underlines the need for more research on postoperative care of the ostomates. The capstone project will be useful in adding to this knowledge.

Article/Journal	Surviving colorectal cancer: Long-term, persistent ostomy-specific concerns and adaptations. *Journal of Wound Ostomy & Continence Nursing*	From diagnosis through survivorship: Health-care experiences of colorectal cancer survivors with ostomies. *Supportive Care in Cancer: Official Journal Of The Multinational Association Of Supportive Care In Cancer*
Author/Year	Sun, V., Grant, M., McMullen, C. K., Altschuler, A., Mohler, M. J., Hornbrook, M. C., et al. (2013).	Sun, V., Grant, M., McMullen, C. K., Altschuler, A., Mohler, M. J., Hornbrook, M. C. et al. (2014).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care, colorectal cancer	CINAHL, Medline, PubMed/ostomy care, colorectal cancer
Research Design	Qualitative research design	Qualitative research design

Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To describe ostomy-specific concerns and adaptations in long-term (>5 years) colorectal cancer survivors with ostomies.	To describe the health-care experiences of long-term colorectal cancer survivors with ostomies.
Population/Sample size Criteria/Power	33 colorectal cancer survivors participated in 8 focus groups. There were also 130 colorectal cancer survivors who provided comments to 2 open-ended questions and their answers were analyzed using content analysis/No power cited	33 colorectal cancer survivors with ostomies who were members of Kaiser Permanente, an integrated care organization, participated in this study/ No power cited
Methods/Study Appraisal Synthesis Methods	Qualitative data were analyzed during the focus group meetings and the answers of the 130 respondents to the 2 open-ended questions were analyzed using content analysis.	The subjects were from Oregon, Washington and California. They participated in 8 focus groups. The discussions were recorded, transcribed, and analyzed for categories and themes.
Primary Outcome Measures/Results	The issues that the survivors encounter as they live with their ostomies are: clothing issues, diet, issues related to ostomy equipment, self-care, and solutions in troubleshooting problems related to living with an ostomy	The themes in this study were grouped into experiences of the subjects: diagnosis, treatment decision-making, initial ostomy experiences and survivorship. The subjects stated their negative and positive health-care-related experiences. They also voiced a need for continued access to nurses who are trained in ostomy care as well as access to peer support and other resources related to managing issues related to living with an ostomy
Conclusions/Implications	The authors cited how check-up and follow up are crucial to the survivors. The authors also underlined the need for long-term support mechanisms that the survivors can access.	The subjects were also asked to fill out the health-related quality of life (HRQOL) survey. However, regardless of their HRQOL score and regardless of their gender, the subjects had all voiced out negative as well as positive

		health-related experiences. The authors advocate for long-term support mechanisms and survivorship care of colorectal cancer survivors with ostomies.
Strengths/Limitations	Strengths—the study gave a detailed explanation of the issues that the subjects encounter. The tables are clear and concise. Limitations—the subjects were from Oregon, Washington and California. Most of the subjects are white. The authors underscored that there should be a larger study and that a more diverse population should be used.	Strengths—the study gave detailed explanation of the issues that the subjects encounter. The tables have detailed narratives of the survivors' experiences. Limitations—the study does not specify what kind of long-term support mechanisms and survivorship care are needed nor did the study cite who will provide this care and how will this be done in light of the recent healthcare changes in the US.
Funding Source	None disclosed.	None disclosed.
Comments	Similar research using more subjects from the different parts of the United States must be executed. The study highlighted ostomy patients' issues at home which need to be addressed in ostomy education.	Research needed on what kind of long-term care is needed, who will provide it, who will pay for it, and how long the care should be provided. The study articulated the need for follow up care for the ostomy patients. Home health agencies provide care to ostomates post-discharge from the hospital. They are one of the first resources that patients encounter related to their ostomy after hospitalization. In the capstone project, the planned intervention of educating home health nurses will be a way to equip them with knowledge and skills that will increase their competence in ostomy care.

Article/Journal	Rehabilitation needs following stoma formation: A patient survey. *British Journal of Community Nursing*	Identifying causes for high readmission rates after stoma reversal. *Surgical Endoscopy*
Author/Year	Taylor, C., Azevedo-Gilbert, R. L., & Gabe, S. (2012).	Keller, D. S., Khorgami, Z., Swendseid, B., Khan, S., & Delaney, C. P. (2013).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care, community	CINAHL, Medline, PubMed/ostomy, ileostomy, colostomy
Research Design	Quantitative research design	Quantitative research design
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To investigate the needs of new ostomists now living in the community and to evaluate the rehabilitation care offered to these new ostomists.	To identify factors related to readmission in ostomy reversal patients.
Population/Sample size Criteria/Power	100 new ostomy patients now discharged to the community in Greater London, UK/No power cited	44 patients who were readmitted from the 351 ostomy patient reversals, US setting/No power cited
Methods/Study Appraisal Synthesis Methods	Questionnaire was developed by the researchers with the help of numerous stakeholders. This questionnaire was sent to 203 patients but only 100 responded. The answers of the new ostomists were analyzed and tabulated. There were free text comments included in the survey and those answers were analyzed for content.	The authors reviewed a prospective department database using the inclusive dates 2006-2012. They identified the patients who were readmitted and those who were not within 30 days of ostomy reversal. Using logistic regression model, they identified predictors of readmission among ostomy reversal patients.
Primary Outcome Measures/Results	Stoma problems that arise when the patients are back in the community impact the ostomists' quality of life. Home visits during the first few weeks post-operative are helpful in aiding patients deal with their ostomies. Leakage is the most common complication cited in this study.	The authors found that longer operative times, intraoperative complications, ICU stay and discharge to a nursing facility were predictors of readmission. Ostomy type, whether the patient had an ileostomy or a colostomy, had no independent effect on readmission.

	Returning to work is difficult for most patients. Quality of ostomists' lives improved when there is continuity of care in acute and community setting.	
Conclusions/Implications	The ostomy care in the community is crucial in the rehabilitation care of the new ostomists. The authors concluded that support is most needed during the first six months after stoma formation. They cited concrete steps to improve the continuity of care from hospital to community.	Discharge and follow-up protocols may need to be modified to reduce unnecessary readmissions.
Strengths/Limitations	Strengths—the authors cited the following as ways to continue ostomy care in the community: support of ostomy association including improving website of the ostomy support group; increasing home health visits; community nurses asked to assess how new ostomists adjust post hospital discharge; providing a dedicated help line; and increasing outpatient appointment capacity of the stoma care team. Limitations—the study was done in UK, therefore, solutions and issues may not be necessarily applicable in other countries.	Strengths—the study evaluated both ileostomy and colostomy patients instead of only one group of patients. Identifying factors that predict readmission of ostomy reversal patients can help modify discharge planning and follow up of these patients. Limitations— only a small sample size was used in this study. The study only involved one institution.
Funding Source	None disclosed	None disclosed
Comments	US study needed and solutions that can be executed within our healthcare system must be formulated. The findings of the study underscore the importance of good ostomy care and education after discharge from the hospital. The need for community	Similar research using more subjects from the different parts of the United States must be executed. The discussion of the health outcomes even after ostomy reversal emphasizes the need for follow up in the community. As seen in this

	resources on ostomy care is emphasized.	study, even after ostomy reversal, patients still encounter more health issues. Modification of discharge planning need to be examined based on ostomy patients' risks.

Article/Journal	Confidence in managing new stoma and satisfaction with stomal therapy service upon hospital discharge. *World Council of Enterostomal Therapists Journal*	Ostomy bag management: Comparative study of a new one-piece closed bag. *British Journal of Nursing*
Author/Year	Stott, C., Graaf, L., Morgan, P., Kittscha, J., & Fairbrother, G. (2013).	Voergaard, L. L., Vendelbo, G., Carlsen, B., Jacobsen, L., Nissen, B., Mortensen, J., Hansen, K., Bach, K. & Boberg Baech, S. (2007).
Database/Keywords	CINAHL, Medline, PubMed/stoma, hospital discharge	CINAHL, Medline, PubMed/colostomy, ostomy
Research Design	Quantitative research design	Quantitative research design
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To investigate patient's reported confidence in stoma care against key demographic and clinical characteristics.	To compare the new SenSura one-piece ostomy bag to an established model bag from another brand.
Population/Sample size Criteria/Power	52 patients in Australia/No power cited	66 Danish patients in different centers. The patients were randomly selected/No power cited
Methods/Study Appraisal Synthesis Methods	Patients were surveyed on their discharge to investigate their confidence in managing their own stoma.	The patients tested each bag and used them for a span of one week each. The patients were given survey questions to answer.
Primary Outcome Measures/Results	Patients who are younger, who are employed and who have had previous abdominal resection have higher confidence levels.	Patients preferred the SenSura bag with 85% approving it. These participants liked that the SenSura bag have better adhesive, filter and that the bag performed better as a whole.
Conclusions/Implications	The relationships of age,	The ostomy bags must have

	employment and previous surgery to confidence in ostomy care are mild. The authors suggest more studies including more institutions and using mixed-method to explore the drivers of patient confidence as they manage their stoma.	characteristics that patients desire so that the patients can cope better as they live with their stoma. Patients have expressed issues about ballooning if the filters and leaking if the adhesive are not effective. Characteristics of the pouch such as comfort, tack, flexibility, adhesiveness, ease of removal, good adhesive design, decrease ballooning and filter position must be considered in assessing ostomy bags.
Strengths/Limitations	Strengths—studying confidence in stoma management is important to patient outcomes. Exploring drivers of confidence will help clinicians identify appropriate educational and care interventions. Limitations—only a small sample size was used in this study. The study only involved one facility in Australia.	Strengths—identifying the characteristics of the ostomy a bag that patient prefers will help in design and improvement of ostomy products. Limitations— the sample size is only 66. The study was done in Denmark and the product may not be available in other countries. This study is sponsored by Coloplast which makes SenSura, the bag that the subjects preferred.
Funding Source	None disclosed	Coloplast sponsored the study.
Comments	Conducting a US study with multiple institutions participating and using mixed-methods will better inform the objective of the study. Findings of the study highlight the importance of customizing ostomy care and education based on individuals' unique attributes.	Conducting a large study in the different states of the US will better inform the outcomes of this study. Ostomy products can impact the quality of life of the ostomates. In helping patients select the products that will be appropriate for them, clinicians can also help impact their patients' quality of life. In the capstone project, the content of the educational intervention will include proper ostomy pouching appliance selection.

Article/Journal	Untreated peristomal skin complications among long-term colorectal cancer survivors with ostomies. *Clinical journal of oncology nursing*	A view from here: Psychosocial issues in colostomy care. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	McMullen, C. K., Wasserman, J., Altschuler, A., Grant, M. L., Hornbrook, M. C., Liljestrand, P., Briggs, K., & Krouse, R. S. (2011).	Simmons, K. L. (2014).
Database/Keywords	CINAHL, Medline, PubMed/ostomy, colorectal cancer	CINAHL, Medline, PubMed/colostomy, ostomy care
Research Design	Qualitative research design	Literature review
Level of Evidence	Level 6	Level 5
Study Aim/Purpose	To study why peristomal skin complications are common and untreated among colorectal cancer survivors with intestinal ostomies.	To review studies that dealt with colostomy care in relation to psychological and social reactions to the colostomy; influence of personal attributes; and psychological care.
Population/Sample size Criteria/Power	This is an ethnographic study. There were 31 pairs of survivors and caregivers who participated. There were 6 families selected who the researchers followed for observation of ostomy care, transportation from the house, social activities, routine tasks, and healthcare visits.	To evaluate literature from 1980 to the time the author wrote the article
Methods/Study Appraisal Synthesis Methods	The data involved interviews with the 31 participant survivors and their family caregivers. There were also structured assessments, field observations and medical chart review. The data were analyzed for qualitative themes and matrix analyses were also conducted.	The author cited 37 studies in her reference list. The databases he used were PsychInfo, CINAHL, and PubMed. The studies reviewed were printed in English, and had colostomy patients as sample.
Primary Outcome Measures/Results	Survivors who get help with stoma care reported fewer	Emotional impairments can impinge on the quality of life

	barriers in detecting and treating peristomal skin issues. Most of the unpaid helpers are spouses. Married couples who collaborate in stoma care report less issues with leaks and are able to detect skin changes sooner. The survivors who encounter the most obstacles in detecting and treating skin issues are those who lived alone or without a spouse, those who cannot visualize their ostomy, or had negative feelings about seeking help regarding ostomy care.	of a colostomy patient. Patients with stoma tend to avoid social situations, and they avoid meeting new people. They are less likely to do recreational activities and use public transportation. There are also issues with sexual intimacy among some of them. Patient's control beliefs, self-efficacy, acceptance and cultural influences impact psychological adjustment to stoma surgery.
Conclusions/Implications	In visits to the health providers, they should ask patients about their ostomy care routines. Examining peristomal skin in health provider visits may be helpful. When skin issues noted, referral to a nurse with ostomy care training may be necessary. Yearly check-ups with a Certified Wound, Ostomy and Continence Nurse (CWOCN) may be warranted.	CWOCN care is warranted for ostomy patients. Patients should also follow up with CWOCN at least one year after the surgery. There may be patients who may need more specialized psychological interventions. Different tools such as videos, peer visit with another person with an ostomy or informational brochures are useful resources in supporting education of the ostomates. Care must be culturally sensitive. The products the patient uses must consider patient's preference and financial resources.
Strengths/Limitations	Strengths—the study gathered information in depth. The caregivers' perspectives were investigated. The families in the study had a wide array of needs. Limitations— the sample size is small. There were few ileostomy patients. The participants are not racially and ethnically diverse.	Strengths—the studies included a long span of time from 1980 to 2013. The author included research from other disciplines such as health psychology and social medicine. The studies reviewed were from different countries. Limitations—There may be studies missed if they

		were not printed in English. Studies with ileostomy and urostomy patients as samples were not included in the review.
Funding Source	None disclosed	None disclosed
Comments	Detailed and informative study, family/caregiver information studied. This study explained the issues that patients encounter at home as they deal with their ostomies. The peristomal skin issues can impact the patient's quality of life. The importance of involving patient's families or friends or other people who can support him/her in ostomy care once at home is discussed in this study. In the capstone project, the content of the educational intervention will include peristomal skin care, information on common peristomal skin issues and the appropriate interventions.	Cultural influences and personal attributes should be investigated more as they impact adjustment to colostomy. They should be considered when clinicians provide ostomy care and education. In the capstone project, the content of the educational intervention will include an emphasis on considering the individual patient in providing them ostomy care and education.

Article/Journal	Quality of life for patients living with ostomies: Influence of contact with an ostomy nurse. *Journal of Wound Ostomy & Continence Nursing*	Perioperative factors that affect long-term adjustment to an incontinent ostomy. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Aronovitch, S. A., Sharp, R., & Harduar-Morano, L. (2010).	Haugen, V., Bliss, D. Z., & Savik, K. (2006).
Database/Keywords	CINAHL, Medline, PubMed/ostomy; nurse	CINAHL, Medline, PubMed/ostomy; colostomy; ileostomy; urostomy
Research Design	Quantitative research design	Quantitative research design
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To determine whether or not contact with WOC (Wound, Ostomy, and continence) nurse improves quality of life	To identify perioperative factors associated with long-term adjustment to an incontinent ostomy.

	for ostomy patients.	
Population/Sample size Criteria/Power	126 patients living with an ostomy in the northern Florida region/No power cited	The participants were recruited from the United Ostomy Association of Minneapolis, Minnesota chapter. There were 147 participants./No power cited
Methods/Study Appraisal Synthesis Methods	The participants were recruited from hospitals, home health agencies, and a large durable medical equipment company in North Florida. The patients were asked to answer demographic questions as well as the Ostomy Quality of Life Questionnaire (OQLQ).	The participants were asked to answer the questions in the Survey of Perioperative Factors of Ostomy Adjustment (OAS).
Primary Outcome Measures/Results	The authors found that individuals who work part-time had a better quality of life than those who work full-time. The participants were satisfied with the health services they received whether or not a WOCN or a non-specialist nurse provided the services. 83% of the participants had seen an ostomy nurse. Body image was a concern to the participants. Concerns were raised about affording supplies despite having insurance. The authors stated that this is likely because of co-pays.	Higher adjustment scores were associated with being educated by a WOC nurse, surgery being done by a colon and rectal surgeon or urology surgeon, and ongoing/recurrent illness. For the factor related to illness, the authors suggested that this may be because the ostomy is seen as "curative", or the ostomy may have alleviated their symptoms, or their illness redirects their focus away from the ostomy. The participants expressed distress over not being able to afford ostomy supplies.
Conclusions/Implications	The participants stated they were satisfied whether they received services from WOC nurse or non-specialist nurse. The participants reported they had a satisfactory quality of life.	WOC nurse involvement in the care of the ostomy patient impact the patient's adjustment to having an ostomy. There must be a WOCN nurses lobby nationally to advocate for accessibility of the ostomy supplies.
Strengths/Limitations	Strengths –the OQLQ addressed physical,	Strengths—the authors sent 200 surveys and had a good

	psychological, emotional and social impact of the ostomy. Lifestyle, body image, and financial impact were also investigated. The questionnaire also addressed care received from nurse and physician. Limitations—small sample size. The study was only done in Florida. The participants also depended on recalling the services they received from a WOCN. Some questionnaires were incomplete.	74% turnout of the surveys. Limitations—the sample is not as diverse in terms of race, geographic location, and age. The study was done in a mostly metropolitan area where patient could have better access to resources.
Funding Source	None disclosed	Convatec (ostomy product manufacturer) and United Ostomy Association of Minneapolis, Minnesota
Comments	Participants reported satisfactory quality of life despite ostomy. 83% of the participants had seen an ostomy nurse. A study comparing participants who did not have any contact with a WOC nurse vs those who have had contact/care from a WOC nurse would be a better study. Clinicians whether they are ostomy experts or not are instrumental in helping ostomates improve their quality of life. The care of ostomy patients fall mostly on the shoulders of the non-expert staff. In the capstone project, the goal is to educate the home health nurses on ostomy care in order to increase their competence and make them more comfortable in caring for the ostomy patients.	Need for longitudinal study to examine adaptation over time. Need a study to investigate the effectiveness of the various teaching methods by WOC nurses when they educate ostomates. Expertise on ostomy care similar to what WOCNs and surgeons have is a factor that can positively impact ostomy education patients and eventually impact their adjustment to living with an ostomy. The contributions of the WOCN as an expert in ostomy care are highlighted. In the capstone project, the intervention will be instruction of the home health nurses by the expert, the CWOCN.

Article/Journal	The incidence of stoma and peristomal complications during the first 3 months after ostomy creation. *Journal of Wound Ostomy & Continence Nursing*	Incidence of complications of the stoma and peristomal skin among individuals with colostomy, ileostomy, and urostomy: A systematic review. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Salvadalena, G. D. (2013).	Salvadalena, G. (2008).
Database/Keywords	CINAHL, Medline, PubMed/ostomy; stoma	CINAHL, Medline, PubMed/colostomy; ileostomy; urostomy
Research Design	Quantitative research design	Systematic literature review
Level of Evidence	Level 6	Level 5
Study Aim/Purpose	To determine the incidence of peristomal and stoma complications during the first 3 months after stoma creation.	To review literature that assessed the incidence of stoma and peristomal skin issues and summarized the possible reasons of variability of results and recommend future research.
Population/Sample size Criteria/Power	43 adult (over 18 years of age) participants/No power cited	21 studies were reviewed/No power cited
Methods/Study Appraisal Synthesis Methods	Participants were evaluated within 7 days of surgery and at 2, 6 and 12 weeks after stoma creation. WOCNs evaluated these patients.	The author used CINAHL, MEDLINE and Web of Science as her databases. She used the keywords ostomies, ileostomy, colostomy, urostomy, stoma, adverse effects, pathology, peristomal, stoma, and complications. She included articles based on ancestry search which is literature search based on the references of the studies she had searched. The inclusive years are 1990 to 2007. The studies are in English and they had a prospective design that reported the number of complications of the stoma and the peristomal skin problems among participants with colostomy, urostomy, and ileostomy.
Primary Outcome	27 or 63% of the participants	The author listed the most

Measures/Results	developed peristomal skin complications. The skin issues occurred during the 21- to 40 day time period. The most common skin issues were peristomal moisture-associated skin damage and infection. Six participants developed one or more stoma complications, happening within 20 days after surgery. No demographic or clinical factors were found to be associated with the development of complications.	common types of complications based on her review: retraction, hernia, prolapse, peristomal skin problems and necrosis.
Conclusions/Implications	Despite the patients being followed by WOC nurses, the majority still developed skin issues related to the ostomy. The author highlights the importance of further work in preventing and treating peristomal skin complications and to provide ongoing follow-up after hospital discharge.	Not all the studies stated operational definitions of the complications. The methods used to measure complication rates were not also explained consistently as per the author of this review. The author recommended development of instruments in measuring stomal and peristomal complications.
Strengths/Limitations	Strengths—WOC nurses did the evaluations and the data were also collected using a validated instrument with acceptable interrater reliability. Limitations—small sample. Only 18 of the 47 completed the 3 month study interval. 88% of the participants came from one hospital.	Strengths—the review highlighted the need for operational definitions of complications as well as methods to evaluate them. Limitations—the review included only publications in English, and the author only used three databases in her search.
Funding Source	The author disclosed that her employer, Hollister funded her travel to present abstracts and posters related to this study.	The author disclosed that Hollister, a company that manufactures ostomy products, is her employer.
Comments	The results suggest a need for follow up in an ostomy clinic for regular visits. Currently, there are settings with no WOC follow up.	The development of instruments in evaluating stomal and peristomal complications will be useful to research.

	This study articulated the need to address peristomal skin complications of the patients after discharge from the hospital. The educational intervention in the capstone project will include assessment and treatment of peristomal skin issues.	Peristomal skin complications are important issues to address after hospital discharge. The educational intervention in the capstone project will include assessment and treatment of peristomal skin issues.

Article/Journal	Descriptive study of peristomal complications. *Journal of Wound Ostomy & Continence Nursing*	Coping and acceptance: The greatest challenge for veterans with intestinal stomas. *Journal of psychosomatic research*.
Author/Year	Ratliff, C. R., Scarano, K. A., & Donovan, A. M. (2005).	Krouse, R. S., Grant, M., Rawl, S. M., Mohler, M. J., Baldwin, C. M., Coons, S. J., McCorkle, R., Schmidt, C.M., & Ko, C. Y. (2009).
Database/Keywords	CINAHL, Medline, PubMed/ostomy; stoma	CINAHL, Medline, PubMed/ostomy; stoma; living
Research Design	Quantitative research design	Mixed-methods design
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To assess new ostomy patients for the presence of perisotmal complications when they return for their 2-month postoperative visit.	To understand patients' perspectives regarding their greatest challenge in living with their intestinal stoma (colostomy and ileostomy).
Population/Sample size Criteria/Power	220 patients who either had a fecal or urinary diversion at a university-based hospital in Charlottesville, Virginia/No power cited	239 ostomates from three Veterans' Affairs locations in the United States participated in the study/No power cited
Methods/Study Appraisal Synthesis Methods	For 12 months, each patient who returned for their 2-month follow-up visit was assessed by 3 WOC nurses using a tool developed by the researchers. The inclusive dates were August 2001 to August 2002.	239 ostomates responded in the survey sent to them. The survey is the modified version of the City of Hope Quality of Life—Ostomy questionnaire. There was also an open-ended request for the participants to describe their greatest challenge in living with an ostomy.
Primary Outcome	The researchers developed a	In this particular study, the

Measures/Results	tool to evaluate perisotomal complication using categories developed from the WOCN guideline. The interrater reliability was established among the 3 WOCN in this study. The peristomal complications in this study include peristomal skin issues that may be mechanical, chemical, infection or allergic response. 13% of the participants developed peristomal skin issues.	authors did a content analysis of the responses to the open-ended item in the survey that asked the ostomates to share their greatest in living with an ostomy. The main domains noted that were also in the City of Hope survey were physical, psychological, social and spiritual well-being. Other domains that emerged include medical care and ostomy-specific issues. The most common challenges noted were coping/acceptance, comorbidities, travel limitations, sexuality, embarrassment, and daily care.
Conclusions/Implications	The study used a tool for assessing peristomal complications. It excluded peristomal problems such as stenosis, necrosis, prolapse, retraction and mucocutaneous separation.	The authors listed that understanding the positive impact of a stoma, how humor can be used to help with coping, finding a greater meaning in life and normalization of life can help with the coping process. In this study, the male participants focused on perfecting their ostomy equipment while the female participants worked towards emotions as they coped with their ostomies.
Strengths/Limitations	Strengths—the development of a tool evaluating peristomal skin problems was useful. Limitations—the tool only includes peristomal skin issues but did not include other problems such as stenosis, necrosis, retraction, prolapse, mucocutaneous separation, and herniation.	Strengths—the study underscored both the issues the participants had in living with their ostomies as well as the ways by which they coped with the challenges. Limitations—the participants are part of the Veterans' Affairs system and their access to healthcare may be different than other ostomates who may have other forms of

		insurance or maybe no insurance, in some cases.
Funding Source	None disclosed	The Research Service Line, Southern Arizona Veterans Affairs Health Care System funded the study.
Comments	The use of the tool and better clarification of the definitions of the peristomal skin problems will be useful to use in practice and research. These will help ensure consistency of assessments and research results. Peristoma skin issues are highlighted in this study. The authors used a tool that narrowed peristomal skin issues to these four classifications: peristomal skin issues that may be mechanical, chemical, infection or allergic response. The educational intervention in the capstone project will include assessment and treatment of peristomal skin issues.	Authors recommended standardized educational regimen to be used by ostomy nurses in educating ostomates, use of ostomate "buddies" to discuss challenges, and access to psychological practitioners before and after procedures. Education of ostomates after discharge is essential in the patients' ability to cope with their ostomies. Home health agencies provide care to ostomates post-discharge from the hospital. They are one of the first resources that patients encounter related to their ostomy after hospitalization. In the capstone project, the planned intervention of educating home health nurses will be a way to equip them with knowledge and skills that will increase their competence in ostomy care.

Article/Journal	Overcoming challenges: life with an ostomy. *The American Journal of Surgery*	Counseling patients undergoing urinary diversion: does the type of diversion influence quality of life? *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Popek, S., Grant, M., Gemmill, R., Wendel, C. S., Mohler, M. J., Rawl, S. M., Baldwin, C.M., Yo, C.Y., Schmidt, C.M., & Krouse, R. S. (2010).	Gray, M., & Beitz, J. M. (2005).
Database/Keywords	CINAHL, Medline,	CINAHL, Medline,

	PubMed/ostomy; stoma; living	PubMed/ostomy; stoma; living
Research Design	Qualitative research design	Systematic review of literature
Level of Evidence	Level 6	Level 5
Study Aim/Purpose	To investigate common themes that impact the quality of life of colostomy patients.	To investigate the differences in health-related quality of life reported by patients who underwent incontinent urinary diversion vs. those who underwent cutaneous continent urinary diversion or bladder substitution.
Population/Sample size Criteria/Power	There were 16 participants in the colostomy focus groups. The participants were divided into two groups based on their score in the City of Hope Quality of Life survey. There were 10 participants in the High Quality of Life (HQOL) scorers and 6 participants in the Low Quality of Life (LQOL) scorers/No power cited	There were 17 studies included in this systematic review of literature/No power cited
Methods/Study Appraisal Synthesis Methods	Content analysis was done using the tape recorded discussions of the focus groups.	The authors used MEDLINE, PubMed, and CINAHL databases from January 1990 to January 2004. The keywords used were urinary diversion, quality of life, health-related quality of life. The studies have the following characteristics; 1) comparison of at least 2 types of urinary diversions; 2) use of at least one validated instrument or single item was used to measure one or more dimensions of Health Related Quality of Life (HRQOL); 3) interviews regarding HRQOL were conducted by someone other than the surgeon who did the surgery; and 4) studies were conducted 2 years or more after the surgery.

Primary Outcome Measures/Results	"Knowledge of own condition" is the most common theme for both HQOL and LQOL groups. The second most common theme was effective and ineffective solutions for ostomy care. The authors noted that the HQOL group members were likely to have more positive perspectives or use humor in describing their health issues. LQOL members were more critical of the care they received and dissatisfied with their overall health.	Continent urinary diversion or bladder substitution may provide a higher HRQOL versus an incontinent diversion. The choice of urinary diversion is based on multiple factors such as the patients' physical health factors, history of abdominal radiation, underlying disease and prognosis, and patient preference.
Conclusions/Implications	Clinicians need to be aware of patients' social, psychological, and medical status to address the patients' needs.	Patient needs factual and realistic presentation of options. Preoperative education is important. Regardless of urinary diversion type, with postoperative education, nursing care and WOCN management, patients can have good HRQOL.
Strengths/Limitations	Strengths—the study noted two other domains related to living with an ostomy: colostomy-specific and healthcare specific. These other most common domains are: psychological, physical, social and spiritual. Limitations—the participants are part of the Veterans' Affairs system and their access to healthcare may be different than other ostomates who may have other forms of insurance or maybe no insurance, in some cases.	Strengths—the article gave detailed explanation of the surgeries and the instruments used in the studies included in the review. The review included the three common urinary diversions. The article summarized key points and clinical implications making the article easier to read and understand. Limitations—use of 3 databases and limiting the articles to English publications may exclude other substantive findings.
Funding Source	The Research Service Line, Southern Arizona Veterans Affairs Health Care System	None disclosed

	funded the study.	
Comments	Patients with poor coping skills may benefit from ostomy support groups, preoperative education, and support from peers with ostomies. The study underlines the importance of postoperative care of ostomates especially those who are now in the community setting.	The review emphasized on the importance of educating patients regarding their treatment options. The study defines continent and incontinent urostomies. The needs of these patients vary. QOL is higher among continent urostomates. For patients with incontinent urostomies, clinicians should be cognizant of their needs especially the complexity of care once they are discharged from the hospital. The capstone project will discuss care needs of incontinent urostomies, colostomies and ileostomies and focus on those patients and exclude the continent ostomies.

Article/Journal	Traditional nurse instruction versus 2 session nurse instruction plus DVD for teaching ostomy care: a multisite randomized controlled trial. *Journal of Wound Ostomy & Continence Nursing*	Construct validation of an interactive digital algorithm for ostomy care. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Crawford, D., Texter, T., Hurt, K., VanAelst, R., Glaza, L., & Vander Laan, K. J. (2012).	Beitz, J. M., Gerlach, M. A., & Schafer, V. (2014).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care; teaching; nurse	CINAHL, Medline, PubMed/ostomy care; teaching; nurse
Research Design	Quantitative study	Mixed-methods survey design
Level of Evidence	Level 2	Level 6
Study Aim/Purpose	This randomized control trial compared two methods of ostomy care instruction to determine their effect on patients' knowledge, skills,	To evaluate construct validity for a face and content validated Ostomy Algorithm using digital real-life clinical scenarios.

	and confidence related to postoperative ostomy care.	
Population/Sample size Criteria/Power	88 patients with newly created ostomies. 23 colostomy and 45 ileostomy/No power cited	297 English speaking RNs were the participants in the study/No power cited
Methods/Study Appraisal Synthesis Methods	The authors used a post-test experimental design. They compared the 2 methods of post-operative ostomy education: the traditional 3 WOC nurse-led instruction sessions and the 2 nurse-led instruction sessions plus DVD instruction accessible in between the live nurse instruction session.	297 RNs from acute care and postacute care settings including one WOCN nurse and 2 nonexpert nurses were the study participants. They answered demographic questions and completed a short algorithm tutorial. After that, they were given 7 ostomy-related digital scenarios with real-life photos and relevant clinical information. Using 11 assessment components of the digital algorithm, the participants chose management options. They were also given the opportunity to write comments about the scenarios.
Primary Outcome Measures/Results	There were no significant differences between the 2 teaching methods or type of ostomy with regard to knowledge of ostomy care, ostomy care skills, or confidence in performing ostomy care.	The mean overall percentage of correct answers was 82.23%. The overall percentage scores were higher among the nurses who stated they were nonexperts versus those who said they were experts. The authors suggested that the experts were likely relying on their clinical experience rather than using the texts explaining the scenarios in the algorithm.
Conclusions/Implications	In educating new ostomates, post-operative teaching methods of nurse-led instructions only is as effective nurse-led instructions plus DVD.	The Ostomy Algorithm is the first face, content, and construct validated instrument in an interactive digital format. It may be useful in guiding nonexpert nurses in product selection for the ostomy patients.

Strengths/Limitations	Strengths—the study was a randomized control trial. The study was conducted in 2 sites in the Midwestern US. Limitations—the authors did not use a validated instrument to evaluate learning style. They also did not use validated tools in assessing knowledge and skills. The participants included were only those who can read and speak English.	Strengths—the study is the construct validation of the Ostomy Algorithm. The first part of the study did a face and content validation. The Algorithm in this study is the first in the world and will be a useful tool in educating nurses in ostomy care. Limitations—the authors conducted the study in the US and among English speaking nurses. The authors mentioned the need to translate and test the Algorithm to make it culturally and linguistically appropriate.
Funding Source	Nursing Education Research Fund at Spectrum Health	ConvaTec, an ostomy supply manufacturer sponsored the study.
Comments	Development of standardized testing of knowledge and skills among new ostomates will be useful in assessing educational outcomes of patients. This will also be useful in comparing outcomes between institutions. Use of technology in educating is valuable and should be considered by clinicians who care and educate ostomy patients. WOCNs play an important role in the discharge planning of ostomy patients. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational	The Algorithm is a validated instrument that will be useful in educating nonexpert nurses regarding ostomy care. Validated tools are useful in ostomy education. The use of technology such as the computers helps in educating nurses on ostomy care. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.

	intervention.	

Article/Journal	Traditional nurse instruction versus 2 session nurse instruction plus DVD for teaching ostomy care: a multisite randomized controlled trial. *Journal of Wound Ostomy & Continence Nursing*	Construct validation of an interactive digital algorithm for ostomy care. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Crawford, D., Texter, T., Hurt, K., VanAelst, R., Glaza, L., & Vander Laan, K. J. (2012).	Beitz, J. M., Gerlach, M. A., & Schafer, V. (2014).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care; teaching; nurse	CINAHL, Medline, PubMed/ostomy care; teaching; nurse
Research Design	Quantitative study	Mixed-methods survey design
Level of Evidence	Level 2	Level 6
Study Aim/Purpose	This randomized control trial compared two methods of ostomy care instruction to determine their effect on patients' knowledge, skills, and confidence related to postoperative ostomy care.	To evaluate construct validity for a face and content validated Ostomy Algorithm using digital real-life clinical scenarios.
Population/Sample size Criteria/Power	88 patients with newly created ostomies. 23 colostomy and 45 ileostomy/No power cited	297 English speaking RNs were the participants in the study/No power cited
Methods/Study Appraisal Synthesis Methods	The authors used a post-test experimental design. They compared the 2 methods of post-operative ostomy education: the traditional 3 WOC nurse-led instruction sessions and the 2 nurse-led instruction sessions plus DVD instruction accessible in between the live nurse instruction session.	297 RNs from acute care and postacute care settings including one WOCN nurse and 2 nonexpert nurses were the study participants. They answered demographic questions and completed a short algorithm tutorial. After that, they were given 7 ostomy-related digital scenarios with real-life photos and relevant clinical information. Using 11 assessment components of the digital algorithm, the participants chose management options. They

		were also given the opportunity to write comments about the scenarios.
Primary Outcome Measures/Results	There were no significant differences between the 2 teaching methods or type of ostomy with regard to knowledge of ostomy care, ostomy care skills, or confidence in performing ostomy care.	The mean overall percentage of correct answers was 82.23%. The overall percentage scores were higher among the nurses who stated they were nonexperts versus those who said they were experts. The authors suggested that the experts were likely relying on their clinical experience rather than using the texts explaining the scenarios in the algorithm.
Conclusions/Implications	In educating new ostomates, post-operative teaching methods of nurse-led instructions only is as effective nurse-led instructions plus DVD.	The Ostomy Algorithm is the first face, content, and construct validated instrument in an interactive digital format. It may be useful in guiding nonexpert nurses in product selection for the ostomy patients.
Strengths/Limitations	Strengths—the study was a randomized control trial. The study was conducted in 2 sites in the Midwestern US. Limitations—the authors did not use a validated instrument to evaluate learning style. They also did not use validated tools in assessing knowledge and skills. The participants included were only those who can read and speak English.	Strengths—the study is the construct validation of the Ostomy Algorithm. The first part of the study did a face and content validation. The Algorithm in this study is the first in the world and will be a useful tool in educating nurses in ostomy care. Limitations—the authors conducted the study in the US and among English speaking nurses. The authors mentioned the need to translate and test the Algorithm to make it culturally and linguistically appropriate.
Funding Source	Nursing Education Research Fund at Spectrum Health	ConvaTec, an ostomy supply manufacturer sponsored the study.
Comments	Development of standardized testing of knowledge and	The Algorithm is a validated instrument that will be useful

	skills among new ostomates will be useful in assessing educational outcomes of patients. This will also be useful in comparing outcomes between institutions. Use of technology in educating is valuable and should be considered by clinicians who care and educate ostomy patients. WOCNs play an important role in the discharge planning of ostomy patients. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.	in educating nonexpert nurses regarding ostomy care. Validated tools are useful in ostomy education. The use of technology such as the computers helps in educating nurses on ostomy care. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.

Article/Journal	Nurse perceptions of ostomy patients & their ostomy care competence. *Home Care Provider*	Sources of practice knowledge among nurses. *Qualitative health research*
Author/Year	Moore, S., Grant, E., & Katz, B. (1998).	Estabrooks, C. A., Rutakumwa, W., O'Leary, K. A., Profetto-McGrath, J., Milner, M., Levers, M. J., & Scott-Findlay, S. (2005).
Database/Keywords	CINAHL, Medline, PubMed/Ostomy care	CINAHL, Medline, PubMed/nurses, knowledge
Research Design	Quantitative design	Qualitative design
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To explore nurses' perceptions of ostomates and the nurses' own competency in caring for ostomates.	To report findings regarding sources of practice knowledge of nurses from two ethnographic case studies.

Population/Sample size Criteria/Power	70 nurses—45 acute care, and 25 home health care nurses/Power not discussed	The authors did not state the number of nurses just the number of patient care units they studied, N=7. The nurses were from adult and pediatric care units. The authors analyzed 213 field notes, 119 interviews, and 17 focus groups.
Methods/Study Appraisal Synthesis Methods	Nonexperimental, causal comparative design	Ethnographic case studies
Primary Outcome Measures/Results	Results revealed that formal instruction increases nurses' perception of their competency in caring for ostomy patients	The four sources of practice knowledge based on these study are: social interactions, experiential knowledge, documents, and a priori knowledge
Conclusions/Implications	The nurses who received more in-services regarding ostomy care perceived that they had high competence levels as well as positive perception of ostomy patients	Two important sources of practice knowledge of nurses are social interactions and experience. The authors caution that nurses must ensure validity of experiential knowledge. The authors also highlighted the issue of a need for nurses to be cognizant of the use of research and that research as a source of knowledge is underutilized in nursing.
Strengths/Limitations	Strengths—the study included home health as well as acute care nurses in an urban hospital. Limitations—the authors pointed out that the study had a small sample size. They also advocated that study be done in rural settings.	Strengths— the study helped describe knowledge taxonomy. Limitation—the study was done in Canada and the nursing population as well as the payer system is different than the US and these factors may be taken into consideration in reading the results.

Funding Source	None disclosed	None disclosed
Comments	Small sample size is small, study done in 1998. The in-services regarding ostomy care can positively impact the nurses' competence levels as well as the positive perception of ostomy patients.	The sample size was not disclosed. Nurses use different methods to learn skills and knowledge. In-service is considered a formal social interaction. The intervention in the capstone project is an in-service, instructional session with home health nurses.

Article/Journal	Difficulties experienced by the ostomate after hospital discharge. *Journal of Wound Ostomy & Continence Nursing*	Discharge information needs of patients after surgery. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Richbourg, L., Thorpe, J. M., & Rapp, C. G. (2007).	Pieper, B., Sieggreen, M., Freeland, B., Kulwicki, P., Frattaroli, M., Sidor, D., Palleschi, M., Burns, J., Bednarski, D., & Garretson, B. (2006).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care, discharge	CINAHL, Medline, PubMed/ostomy care, discharge
Research Design	Quantitative design	Literature review
Level of Evidence	Level 6	Level 5
Study Aim/Purpose	To identify the difficulties of ostomates after they are discharged from the hospital, find out who they seek help from, and investigate if advice was helpful as per the ostomates' perception.	To examine the information needs of postoperative patients before hospital discharge.
Population/Sample size Criteria/Power	34 patients in North Carolina, 18 years or older, have fecal or urinary diversion, surgery 2003-2005/No power cited	Total of 16 studies examined, qualitative and quantitative included. The studies were from Canada, US, England, the Netherlands, Australia/No power cited
Methods/Study Appraisal Synthesis Methods	Descriptive study using STATA 9.0. Categorical data summarized in means, medians, standard deviations,	1990 to 2004 articles in English, patients were adults. The search terms used were patient discharge, hospital

	ranges, frequencies, and percentages	discharge and patient teaching. Databases were PubMed and CINAHL.
Primary Outcome Measures/Results	The ostomates stated that these are the 5 common issues they encounter related to their ostomies, after hospital discharge: leakage, skin irritation, odor, depression or anxiety, and uneven pouching surfaces	The 10 authors were from the state of Michigan. They reviewed the articles and their findings are as follows: 1) Critical areas of information needs relate to pain management, incision/wound care, and activity guidelines. 2) There is a need to research learning needs of the elderly, illiterate, and vulnerable groups. 3) Family involvement positively helps the patients. 4) CWOCNs are critical in helping develop and evaluate educational programs as well as assist in designing research studies.
Conclusions/Implications	The ostomates found that the CWOCN advice is very helpful. Few ostomates attended the ostomy support groups. The respondents found these sources as least helpful: primary care physicians, surgeons and home health nurses.	Research needs to be done considering literacy. Teaching methods, when and what should be taught related to discharge need to be further investigated.
Strengths/Limitations	Strengths—study pointed out to the need for outpatient resources after discharge from hospital. With length of hospital stays becoming shorter, it is important to research on the patients' needs after discharge. Limitations—The study had few respondents. The subjects	Strengths—the authors included studies from different countries and different authors offering varying perspective on the subject. The studies included qualitative and quantitative research. Limitations—The studies did not have one tool that measures the variables being

	only involved North Carolina and not from other or all the states.	explored. There was several instruments used. Some studies used interviews, some questionnaires.
Funding Source	None disclosed	None disclosed
Comments	Sample size is small. Needs nationwide study or study involving more states. The study emphasized the need for home health nurses to recognize signs and symptoms of depression among ostomates, which is a common problem among this type of patients.	The literature review is a source of good information on the topic of patient education and discharge of postoperative patients who are the center of this capstone project. Helping patients is the ultimate goal of the capstone project and therefore knowing patients' educational needs is critical.

Article/Journal	Ostomy care and management: A systematic review. *Journal of wound, ostomy, and continence nursing: official publication of The Wound, Ostomy and Continence Nurses Society/WOCN*.	Testing a computer-based ostomy care training resource for staff nurses. *Ostomy/wound management.*
Author/Year	Recalla, S., English, K., Nazarali, R., Mayo, S., Miller, D., & Gray, M. (2013).	Bales, I. (2010).
Database/Keywords	CINAHL, Medline, PubMed/ostomy care, discharge	CINAHL, Medline, PubMed/ostomy care; teaching; nurse
Research Design	Systematic literature review	Quantitative study
Level of Evidence	Level 5	Level 6
Study Aim/Purpose	To review evidence for the assessment and management of colostomies, ileostomies, and urostomies, as well as peristomal skin.	To test if a computer-based ostomy care training session will increase the confidence and autonomy ratings of staff nurses using a pre-test/post-test questionnaire.
Population/Sample size Criteria/Power	95 articles reviewed: 69 quantitative, 11 qualitative, and 8 systematic reviews	170 nurses were the participants in the study but only 103 returned their pre-test and post-test questionnaires. The nurses were from the Methodist Medical Center of Illinois.

		They were randomly selected/No power cited
Methods/Study Appraisal Synthesis Methods	The authors reviewed articles published in English. The papers had adult, neonatal or pediatric subjects. The review used 6 questions to guide their literature search.	The author with the assistance of an ostomy supply manufacturer, Coloplast created a computer-based training module that consisted of photographs and instructions. The foci of the training were pouch application and pouch emptying. The author developed an eight-question pre- and post-test questionnaire. Using a 5-point scale, nurses were asked to rate their level of confidence in providing ostomy care, the usefulness of electronic resources, and sense of autonomy in providing care.
Primary Outcome Measures/Results	Specialized nurses such as enterostomal therapists are important in making recommendations for treatment of issues such as peristomal dermatitis. The review summarized findings regarding quality of life, physical and psychological impacts of the ostomy/ies as well as self-care practices that are useful in adapting to the ostomy/ies.	The author used SPSS, a statistical program in analyzing the data. The nurses in the study reported that they had increased confidence and autonomy in providing ostomy care after they did the computer-based training. The findings also suggest that the computer-based training was helpful.
Conclusions/Implications	The review cited that it is unclear as to which nurses (specialist or non-specialist) provided which care. The authors were not able to distinguish which effective interventions were performed by which nurse.	Use of a computer-based training will be useful in training staff nurses regarding ostomy care.
Strengths/Limitations	Strengths—study included many types of studies to gather best practices guidelines. The authors did	Strengths—the participants were randomly selected and the sample size was large. The author is an expert in her

	mention though that there is a lack of experimental data. Limitations—the search was broad. This review found no study addressing resources used by patients to address their ostomy and peristomal self-care. There is also paucity of data regarding pediatrics, adolescents and their families as they all cope with the ostomy/ies. Search included only the years 2008 to 2011.	field. The results reported were consistent. Limitations— study was done in one facility and thus generalizability of the findings may be limited. The study only assessed the nurses' confidence and tonomy. It did not investigate the impact on the quality of care provided.
Funding Source	This review is a part of the task force of the Registered Nurses' Association of Ontario (Canada).	The author is affiliated with Methodist Medical Center of Illinois where the study was conducted.
Comments	Covered different topics but the review only found 2 studies regarding nurses' educational needs related to ostomy care of patients. The paucity of information regarding addressing nurses' educational needs related to ostomy care points to the timeliness and relevance of the planned capstone project.	The foci of the study were limited to pouch emptying and pouch application. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.

Article/Journal	Staff nurses' knowledge and perceived responsibilities for delivering care to patients with intestinal ostomies: A Cross-sectional Study. *Journal of Wound Ostomy & Continence Nursing*	Community nurses' understanding of the community stoma care nurse. *British Journal of Nursing.*
Author/Year	Duruk, N., & Uçar, H. (2013).	Skingley, S. (2006).
Database/Keywords	CINAHL, Medline, PubMed/ostomy knowledge, nursing care, ostomy, stoma	CINAHL, Medline, PubMed/ostomy knowledge, nursing care, ostomy, stoma
Research Design	Quantitative study	Mixed-methods study

Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To find out the opinions of nurses regarding their knowledge of and perceived responsibility for providing ostomy care.	To investigate community nurses' understanding and perception of the role of the community stoma care nurse.
Population/Sample size Criteria/Power	100 acute care nurses in Ankara, Turkey/No power cited.	120 trained community nurses in the UK participated in the study/No power cited
Methods/Study Appraisal Synthesis Methods	The nurses answered a two-part questionnaire. The first section consisted of demographic studies and the perceived responsibility for providing ostomy care for patients. The second part consisted of 54 items that addressed knowledge on ostomy care.	76 community nurses responded to the questionnaire sent by the authors. There was a pilot study done first using the same questionnaire before it was sent to the respondents. In this exploratory survey, there were quantitative items summarized. The emerging themes from the qualitative items were explained.
Primary Outcome Measures/Results	The level of knowledge on ostomy care was low. The nonspecialty practice nurses did not perceive ostomy care to be their responsibility. The factors that influenced the level of knowledge regarding ostomy care include the years of nursing experience, participation in meetings about the subject, educational level, and level of reviewing literature regarding ostomy care.	80% of the community nurses know who the community stoma care nurses were and 93.4% of them are aware of how to contact these specialists. Only 2.2% of the 76 respondents were not able to attend any of the educational sessions that the ostomy specialists held. The respondents said that good communication and access to the educational sessions are helpful in improving ostomy care in the community. The nurses listed these four important roles of the ostomy nurse: appliance updating, counselling, management of peristomal skin problems, and in-service training of the community nurses.
Conclusions/Implications	Nonspecialty nurses have low levels of knowledge regarding ostomy care compared to the	The ostomy nurse specialist function as an educator for the community nurses. The

	specialty practice nurses. They also do not perceive ostomy care to be their responsibility.	specialist also has a role in the care of the ostomy patients at home when the nurse can prescribe ostomy appliance and also help in troubleshooting issues such as peristomal skin problems.
Strengths/Limitations	Strengths—questionnaire was tested for validity by three nursing faculty members of 2 Ankara universities. The authors also piloted the questionnaire among 12 nurses before using it in the study. The study was relevant to Turkey's health issues as they have a limited number of enterostomal therapists (ostomy nurses) and hence, the findings are useful in justifying expansion of enterostomal training. Limitations—the study was done in Turkey and the findings may not be applicable in the US.	Strengths—the study helped clarify the role of the community stoma care nurse. It was also helpful in improving communication and collaboration between the specialist nurse and the community nurses. Limitations—the study was done in the UK and the findings may not be applicable in the US. Note that the specialist in stoma care is called community stoma care nurse whose function is being the specialist in the community. The terminology WOCN is used in the US.
Funding Source	None disclosed	None disclosed
Comments	In the capstone project, the home health nurses are not ostomy specialists. Training these nurses on ostomy care will equip them with knowledge and skills.	In the capstone project, the identified intervention will be done by a Certified wound, ostomy and continence nurse (CWOCN). In this study, the ostomy specialist nurses' functions are highlighted. The community nurses identified the ostomy nurse as the expert who they look up to for education and guidance in dealing with problematic ostomy issues.

Article/Journal	Hospital secondments of community nurses to improve stoma care. *British Journal of Community Nursing*	The Urostomy Education Scale: a reliable and valid tool to evaluate urostomy self-care skills among cystectomy patients. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Adams, T., Dufton, R., Lamb, C., & Taylor, M. (2003).	Kristensen, S. A., Laustsen, S., Kiesbye, B., & Jensen, B. T. (2013).
Database/Keywords	CINAHL, Medline, PubMed/ostomy knowledge, nursing care, ostomy, stoma	CINAHL, Medline, PubMed/ostomy knowledge, nursing care, ostomy, stoma
Research Design	Quantitative study	Quantitative study
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To evaluate the benefits of the secondment program based on the perception of the participants and to identify ideas for future opportunities as per the suggestions of the participants. Secondment is when generalist and community nurses work in another department; in this case they worked with the colorectal team, part time for 6 months.	To validate a quantitative scale for nurses to evaluate self-care skills among patients undergoing a cystectomy with urostomy creation.
Population/Sample size Criteria/Power	The participants were randomly selected from surgical and community settings. There were 130 surveys sent. 73 nurses completed the survey/No power cited	There were twelve patients undergoing cystectomy with urostomy in a hospital in Denmark where the study was done. These were the participants in the study/No power cited
Methods/Study Appraisal Synthesis Methods	Participants were randomly selected to be surveyed. They were nurses working in the surgical and community settings. In the survey, they were asked whether they know of a colleague who participated in the secondment program, whether knowledge and skills were disseminated by these secondees to their	4 nurses attended 12 patient training sessions at different postoperative days. The 3 nurses who were instructed by the fourth nurse, an enterostomal therapist, instructed these nurses. The nurses rated the 12 patients using the Urostomy Education Scale. There was a 4 point scale on each self-care skill.

	colleagues, if they benefited from the knowledge gained by the secondees, and what other ideas for secondment opportunities they may have.	There were seven skills identified: reaction to the stoma, removing the pouching system, measuring the stoma diameter, adjusting the size of the urostomy diameter in a new stoma appliance, skin care, fitting a new stoma appliance, and emptying process.
Primary Outcome Measures/Results	66% of the participants are aware of the secondment program. 88% said they had benefited from the knowledge of the secondees. 34% have not heard of the program. Secondees disseminate knowledge to the rest of the community and surgical staff. The staff nurses have become empowered with the program. They developed transferrable skills.	The Urostomy Education Scale is the first criterion-, content- and construct-validated tool in evaluating patient's urostomy self-care skills. The authors also found interrater reliability in this study.
Conclusions/Implications	Work-based programs are helpful in educating the staff. Staff cross-training in another department help in empowering them and equipping them with skills, in this case, ostomy care skills.	Using this Urostomy Education Scale or similar scales will be helpful in evaluating patient's self-care skills. This Scale is useful in the clinical and research settings.
Strengths/Limitations	Strengths—the program in this study was helpful in disseminating information on ostomy care to the generalist and community nursing staff. Limitations—the study was done in the UK and the findings may not be applicable in the US.	Strengths—the creation of a tool to evaluate self-care skills will be useful to non-CWOCN or non-ostomy expert staff. The staff ca use the tool in evaluating patient's skills when experts may not be available. Limitations—the study was done in Denmark where lengths of stay, staffing and ostomy equipment, just to name a few, are different from that of the US. The study used only 12 patients as participants and 4 nurses as evaluators. A

		larger study is warranted.
Funding Source	None disclosed	Foundation of Inge Eriksen
Comments	The stoma care specialists were involved in the development of this program. The capstone study also involves the WOCN, the specialist in ostomy care. As in this study, the expert nurse is instrumental in ostomy care education and program development of nurse education regarding the topic.	It is important to break down the skills that the patients needed to learn as they learn to live with an ostomy. Identifying the skills the patient need to master will help the non-ostomy specialist nurses evaluate their patients' skills in ostomy self-care.

Article/Journal	Content validation of a standardized algorithm for ostomy care. *Ostomy/wound management*	A cost–effectiveness analysis of a multimedia learning education program for stoma patients. *Journal of Clinical Nursing*
Author/Year	Beitz, J., Gerlach, M., Ginsburg, P., Ho, M., McCann, E., Schafer, V., Scott, V., Stallings, B., & Turnbull, G. (2010)	Lo, S. F., Wang, Y. T., Wu, L. Y., Hsu, M. Y., Chang, S. C., & Hayter, M. (2010)
Database/Keywords	CINAHL, Medline, PubMed/ostomy knowledge, nursing care, ostomy, stoma	CINAHL, Medline, PubMed/ostomy knowledge, nursing care, ostomy, stoma
Research Design	Mixed-methods study	Quantitative study
Level of Evidence	Level 6	Level 2
Study Aim/Purpose	To establish content validity of a new standardized algorithm for ostomy care developed by wound, ostomy and continence nurses (WOCNs) experts.	To compare the costs and effectiveness of ostomy education using a multimedia education program (MLEP) and a conventional service program (CESP).
Population/Sample size Criteria/Power	There were 166 WOCNs who self-identified as ostomy care experts in this study. These participants were asked to quantify the degree of validity of the Ostomy Algorithm's decisions and components. They were given opportunities to use open-ended comments which were thematically	This study used a randomized experimental design. There were 54 patients in the study. They were randomly assigned to MLEP or CSEP nursing care with a follow up of one week/No power cited

	analyzed by the authors/Authors stated 150 was the minimum for their power analysis. They recruited 180 and they had 166 participants.	
Methods/Study Appraisal Synthesis Methods	This US study used a cross-sectional, mixed-methods study design. The authors surveyed 166 WOCNs who were purposively sampled. These WOCN participants did an online survey of the Algorithm. They did the survey in about 25 minutes. The quantitative data were analyzed using Excel and Quantum. The qualitative data were analyzed using reduction techniques—identifying themes and associated indicator statements.	The 54 patients were assigned either to the MLEP group of the CESP group. The MLEP group received a CD that discussed stoma, anatomy, and indications for stoma surgery, stoma care and irrigation. It used film and pictures. The researcher then answered any questions after the MLEP was finished. The CESP group received a stoma care brochure and a subsequent follow up visit from the researcher to answer any questions. Both groups received a self-administered questionnaire. Effectiveness of the measures was assessed by evaluating patients' knowledge of self-care (KSC), attitude of self-care (ASC) and behavior of self-care (BSC).
Primary Outcome Measures/Results	The Ostomy Algorithm was validated for content. Based on the comments of the WOCNs in the study, the authors modified the Algorithm. This Algorithm may be used to teach clinical staff members who do are not ostomy care experts. This tool can be used to help staff identify stoma-related issues and corresponding solutions to those issues.	The patients in the MLEP group scored higher on those three areas than the CESP group. The MLEP costs are also lower in terms of health care, the MLEP itself and family costs.
Conclusions/Implications	An algorithm that can assist the non-expert staff nurses care for ostomy patients is a	A multimedia educational program in training ostomy patients after their surgery is a

	useful tool to have in different clinical settings.	useful teaching tool.
Strengths/Limitations	Strengths—this US study included WOCNs from different parts of the country. The sample size of 166 WOCN experts was also above the 150 minimum that the authors cited for power analysis. After the comments of the participants were received, the authors included changes in the algorithm such as patient preference, dexterity, and visual acuity as important factors to be considered in ostomy pouching system selection. There were also other changes in the algorithm made based on the participants' feedback. Limitations—study was done in the US and future research may need to happen in other countries. The participants self-identified themselves as experts with no other validation done. The comments written online were not followed up in person to delve into the participants' meaning of the comments. The authors recognized a need to validate the tool with real-life stoma complications or among non-expert users. Research on the Algorithm's effects on patient outcomes is warranted.	Strengths—a random experimental design is not common in research in ostomy education. The authors did a comprehensive cost analysis of the interventions and compared the costs of the two. Limitations— this study was done in Taiwan and there are variations between Taiwan and the US healthcare system. The study only included fecal ostomy patients with colon cancer.
Funding Source	ConvaTec funded the study but the participants were blinded to company sponsorship to avoid bias.	The authors acknowledged the participation of patients and staff in the Surgical Department of Taiwan Hualien Buddhist Tzu Chi Medical Center.

Comments	The Algorithm will be a useful tool to use as a reference in the capstone project.	This study underlines the usefulness of technology such as teaching materials in a CD format that can be employed in ostomy care education. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.

Article/Journal	Preoperative intensive, community-based vs. traditional stoma education: a randomized, controlled trial. *Diseases of the Colon & Rectum*	Healthcare experiences of patients following faecal output stoma-forming surgery: A qualitative exploration. *International Journal of Nursing Studies*
Author/Year	Chaudhri, S., Brown, L., Hassan, I., & Horgan, A. F. (2005).	Thorpe, G., McArthur, M., & Richardson, B. (2013).
Database/Keywords	CINAHL, Medline, PubMed/ostomy; stoma; education	CINAHL, Medline, PubMed/ostomy; stoma; care
Research Design	Quantitative study	Qualitative study
Level of Evidence	Level 2	Level 6
Study Aim/Purpose	To compare preoperative intensive, community-based stoma education with conventional postoperative stoma education after elective colorectal surgery.	To explore the patient's experience of living with a new stoma and interactions with healthcare over time.
Population/Sample size Criteria/Power	There were 42 elective colorectal patients requiring a stoma. The study was done in the UK/No power cited	There were 12 participants in the study/No power cited
Methods/Study Appraisal Synthesis Methods	This is a randomized controlled trial with 42 participants. There were patients assigned to a group	This UK study used existential phenomenological methodology using interviews of 12 patients with a new

	that received two preoperative ostomy educational sessions and the conventional postoperative visits. The other group only received the conventional postoperative teaching. The authors measured stoma proficiency, hospital stay and unplanned stoma-related community interventions. The costs between the two groups were also compared.	stoma. They were interviewed at three, nine and fifteen months post-surgery. These patients were purposely chosen as they will have their ostomy for more than one year. They have different illness histories and diagnoses. There are patients who had an emergent surgery, others had elective.
Primary Outcome Measures/Results	The patients who received pre- and post-operative teachings versus those who only received post-operative teachings were found to have shorter hospital stays, better stoma proficiency, and have less unplanned stoma-related community interventions. The cost saving among the study group was also higher.	The themes of healthcare experiences of patients after ostomy surgery were identified: relationships with healthcare professionals, being prepared, and regaining autonomy. Mastery of ostomy skills, building a new sense of embodied self, and acceptance and support of others are important to these patients.
Conclusions/Implications	Stoma education is more effective in the pre-operative setting. It can result to shorter hospital stay and less stoma-related interventions once in the community. Pre-operative ostomy teaching also help in cost saving.	Healthcare knowledge, experience and personal approaches to care especially their approach towards an ostomy patient can influence the patient's adaptation and acceptance of self as an ostomate. Healthcare workers need to be aware how their experience and approaches can impact a patient's adjustment to his/her stoma.
Strengths/Limitations	Strengths—the study was a randomized control trial. The researchers also factored in monetary savings in their study. Limitations— this study was done in the UK and there are variations between the UK and the US healthcare system. The sample of 42 divided into	Strengths—the lived experiences of the patients with a new stoma were captured in this study. The study highlights the global aim of meeting individual patients' needs. Limitations— this study was done in the UK and there are differences in caring for

	two groups was small.	ostomy patients in the UK and the US.
Funding Source	Coloplast, an ostomy supply manufacturer	University of East Anglia PhD studentship and the League of St. Bartholomew's Nurses Isla Stewart Memorial Fund
Comments	Pre-operative teachings can impact outcomes in home health. In the capstone project, the home health nurses will be informed that pre-operative teaching is a factor on how quickly a patient can gain stoma proficiency. Absence of pre-operative is also a factor on unplanned stoma-related home health visits.	Professional relationship between the new ostomy patient and the healthcare providers is important in the patient's adaptation to and acceptance of ostomy.

Article/Journal	Development of a chronic care ostomy self-management program. *Journal of Cancer Education.*	WebQuests: A viable solution to meeting the continuing professional education needs of home health care nurses. *Home Health Care Management & Practice.*
Author/Year	Grant, M., McCorkle, R., Hornbrook, M. C., Wendel, C. S., & Krouse, R. (2013).	Maxwell, S. M. (2009).
Database/Keywords	CINAHL, Medline, PubMed/ostomy; stoma; education	CINAHL, Medline, PubMed/nurse; education; home health
Research Design	This article incorporated the three overlapping descriptive studies done by the researchers. The three studies used a combination of qualitative and quantitative methods.	Case study
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To describe the development of a Chronic Care Ostomy Self-Management Program.	To evaluate WebQuest, a Web-based tool in providing continuing nursing education
Population/Sample size Criteria/Power	First study had 1,513 participants. Second study had 239 ostomates and 272 non-	Five participants completed the WebQuest course and returned the evaluation/No

	ostomates. The third stuy had 679 participants.	power cited
Methods/Study Appraisal Synthesis Methods	The first study had 1,513 participants. They had bowel or urinary ostomies, some are cancer and some are non-cancer patients. This study established the validity and reliability of the City of Hope Quality of Life Questionnaire. The second study used a mixed-method, case-control survey. The qualities of life of male veterans with and without intestinal ostomies were evaluated. There were 239 ostomates and 272 non-ostomates in the study. Focus group of 15 ostomy patients were further studied for concerns and barriers faced by the ostomates. The third study was also a mixed-method study but the 679 participants were all colorectal cancer survivors (>5 years since diagnosis). Focus groups of 34 participants were used to investigate quality of life.	The five participants are home health nurse case managers working in the US. They were asked to complete a WebQuest learning module on diabetes education and teaching strategies in home care.
Primary Outcome Measures/Results	Physical well-being issues include changes in diet, fatigue, sleep disturbance and other physical needs. Ostomy-related issues such as hygiene, skin care, troubleshooting, getting used to wearing a pouch, equipment decisions, carrying emergency ostomy kits, and specific ostomy complications. The impact of the ostomy on psychological well-being include depression, feelings of loneliness and uselessness, loss of control, changes in	The participants were given a 25 closed-end questions that rate the WebQuest module. They were also given a comments section to fill out to comment on future WebQuest design for future continuing education courses.

	appearance, fear of recurrence, inability to cope and increased privacy needs. Patients' ability to adapt impact their psychological well-being. Patients' social well-being encompasses sexual and non-sexual relationships. There are reports of perception that they smell, are stigmatized, or feelings of being repugnant to others. An issue with working such as taking breaks for a teacher was also highlighted. As for the psychological well-being, there are patients who report great difficulty in accepting changes in how they perceive the meaning of life. Some report uncertainty about the future and some have challenges in accepting reasons for living. Some think religion provides comfort, others do not. The focus groups revealed that many find it difficult to adapt to the ostomy. There were many who reported that a contact with an ostomy nurse had been helpful when they try to troubleshoot issues. Having someone who has an ostomy for discussion and counseling helps.	
Conclusions/Implications	The authors recommend that physicians, nursing staff and an ostomy nurse, if available, should be involved in the patient's ostomy teaching. The pre- and post-operative teaching by the ostomy nurse was underscored as important in helping the patient adapt to living with an ostomy. The program recommended by	An online tool like WebQuest that nurses can use at home and during a convenient time to earn continuing education units is useful in educating staff nurses. To be an effective tool like WebQuest, an online tool should be effective, easy to access and navigate.

	the authors based on these three studies include: addressing the many aspects of the patient's life; involvement of a partner or caregiver, if there is one; access to an experienced ostomate; and self-management program to be delivered by an experienced ostomy nurse. The authors are trialing the program in Tucson, AZ and the results of this self-management program for ostomy patients are yet to be published.	
Strengths/Limitations	Strengths—the three studies were done in the US. The results and recommendations were comprehensive. Limitations— this study involved the veterans and the US VA system has features that are not the same as other American health settings.	Strengths—this is a US study with findings that may be applicable to the capstone project which will be conducted in the US. Research on online educational tools and home health nurses' use of them adds to the knowledge regarding these topics. Limitations—the case study only had 5 participants and a larger study is warranted.
Funding Source	Veteran Affairs Health and Science Merit Review Grant	None disclosed
Comments	Collaboration of ostomy nurses, physicians, nursing staff and other healthcare providers are important in the care of ostomy patients. In the capstone project, the home health nurses will be educated in the hope of empowering them and giving them more tools so they can effectively help ostomy patients. This study further emphasizes that the issues of ostomy patients do not end in proper ostomy	Aside from the traditional lecture and hands-on demonstration and return demonstration, educating nurses regarding ostomy care can also employ use of online technology similar to WebQuest.

	appliance selection and application but that psychological needs and social needs such as sexual issues should also be addressed. The article emphasizes the importance of peer support. In the capstone project, the participants will be informed about encouraging their patients to attend the local support groups and they will also be given information regarding the local ostomy support groups. In the capstone project, the home health nurses will be informed of the importance of involving the patient's family or significant other/spouse or caregiver , if they are able and willing, in ostomy care.	

Article/Journal	Learning style preferences of undergraduate nursing students. *Nursing Standard.*	Generational differences and learning style preferences in nurses from a large metropolitan medical center. *Journal for Nurses in Professional Development.*
Author/Year	Rassool, G. H., & Rawaf, S. (2007).	Robinson, J. A., Scollan-Koliopoulos, M., Kamienski, M., & Burke, K. (2012).
Database/Keywords	CINAHL, Medline, PubMed/nurse; education; learning style	CINAHL, Medline, PubMed/nurse; education; learning style
Research Design	Quantitative study	Quantitative study
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To determine the predominant learning style preferences of undergraduate nursing students	To determine if there is a relationship between staff nurses' generation and their learning styles.
Population/Sample size Criteria/Power	110 out of the 136 participants returned the survey form/No power cited	122 of the 164 nurses surveyed returned their questionnaire/No power cited
Methods/Study Appraisal	The 110 nursing students were	There were 122 participants

Synthesis Methods	from the UK. They were sent a demographic and learning styles preference questionnaire. The learning styles questionnaire was designed by Honey and Mumford. There were 80 questions that assessed the respondent's learning styles. The styles are activist, reflector, theorist, or pragmatist.	(all nurses working in a large metropolitan medical center) in this cross-sectional survey. They were given demographic questions to answer. They were also asked to complete Kolb and Kolb's learning style inventory (LSI, version 3.1, 2005). Data were analyzed using SPSS 15.0.
Primary Outcome Measures/Results	The findings of the study revealed that 48 or 44% of the respondents have the reflector learning style. The next largest group has the dual learning style. The predominant dual styles combination is reflector/theorist. The definitions of the styles are as follows: Activist—interested in the here and now, like applying immediate experiences in learning. Reflector—observes experiences and analyzes experiences before taking action. Theorist—adopts a logical and rational approach to problem-solving, needs structure with clear goal and purpose. Pragmatist—tries out ideas and techniques to see if they work in practice, likes to make decisions and problem-solve.	The four learning styles according to Kolb are: Converger—abstract learner, uses deductive reasoning Diverger—imaginative learner who uses different perspectives Assimilator—abstract learner, uses inductive reasoning, able to create theories Accommodator—concrete learner who adapts to new situations, uses intuition, uses trial-and-error to solve problems In this study, the group that uses diverger and accommodator learning styles are those who are older, had more time off from school since their nursing degree, had more nursing practice years, were not currently enrolled in an educational program, have no advanced degree, and those that had been out of school for a shorter time. The assimilator and converger learning styles are preferred by the younger nurses, have fewer years in nursing practice, have an advance degree, still enrolled or just finished their nursing

		program.
Conclusions/Implications	To meet the different needs of the learners, educators must be aware of the learning styles of their students. This will aid the educators in choosing the teaching strategies that meet their students' needs.	When developing educational programs, educators should consider learning styles of the audience. Learning styles are influenced by level of education, how long a nurse has been out of nursing school, and the accumulation of professional experiences.
Strengths/Limitations	Strengths—the study sheds light on the importance of considering the learners' learning style preferences when coming up with teaching strategies. Limitations—the authors have underlined the criticism of the tool used stating there are questions on its validity and reliability.	Strengths—the study highlights the differences of the different generations of nurses and their learning styles. This is useful to educators who are designing and teaching classes or courses. Limitations—the findings may not be generalizable to other contexts. The study also did not differentiate nurses who worked as LPNs and who are now RNs. Questions regarding second career and age of nursing school entry were not included.
Funding Source	None disclosed	None disclosed
Comments	In planning and executing the capstone project, the learning style preferences of the home health nurses must be taken into consideration.	It will be useful to consider the overall demographics of the home health nurses who will participate in the capstone project. The educational session should be designed based on the nurses' learning styles.

Article/Journal	The use of innovative pedagogies in nursing education: An international perspective. *Nursing Education Perspectives.*	E-learning for cancer nurse education. *Nursing Times*.
Author/Year	Brown, S. T., Kirkpatrick, M. K., Greer, A., Matthias, A. D., & Swanson, M. S. (2009).	Irving, M., Irving, R., & Sutherland, S. (2007).

Database/Keywords	CINAHL, Medline, PubMed/nurse; education; learning style	CINAHL, Medline, PubMed/nurse; education; learning style
Research Design	Mixed-methods	Quantitative study
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To explore the types of innovative pedagogies used in nursing education worldwide.	To summarize the feedback of the learners who took online courses in cancernursing.org. This is a website developed by Nurse Learning, a UK based registered nonprofit organization that develops and provides free online courses for nurses and cancer carers globally. The courses are stand-alone and learners can do them in their own time. Because there are no online collaborations, the organization now has an online forum. There is also a way to ask the expert if anything needs to be clarified. In 2006, there were 8 courses offered in this site. The courses are reviewed by experts annually. The courses were also written by a panel of experts.
Population/Sample size Criteria/Power	There were 946 participants in this study/No power cited	11,000 learners/No power cited
Methods/Study Appraisal Synthesis Methods	Out of the 946 participants, fewer than 2% were from outside the US. The researchers designed a three-part instrument that had included questions on demographics, pedagogical teaching/learning approaches, and teaching/learning strategies. The respondents were given a weblink to the survey. There were also open-ended items and the responses were analyzed for content.	The learners were asked to evaluate the course/s they too and the authors tallied their answers. There were also free-text feedback comments that the authors summarized.

Primary Outcome Measures/Results	Conventional teacher-centered approach remains the most prevalent pedagogical style with 56% of respondents saying they use this approach. 90% of the respondents say they use a tool to measure the effectiveness of their teaching. 88% view themselves as facilitators in education and 65% view their faculty role as information giver. Lecture, discussion, evidence-based, case-based, and multimedia strategies were used by 70% of the participants and this indicates that active learning strategies in the courses to engage the learners.	98% of the 11,000 learners who completed a course in the website found the content valuable and useful. 85% felt the courses improved their knowledge and understanding of that particular subject. 83% felt that the courses will help improve the care they will provide as a result of improving their knowledge. The free-texts revealed common themes such as 1) flexibility of learning at their own time and in their own pace; 2) the courses provide them with increased confidence to practice; and 3) the learners found online learning fun.
Conclusions/Implications	Teaching/learning strategies correlated with pedagogical approaches and comparing student outcomes must be investigated to help improve nursing education. Faculty development will involve faculty training on different teaching methods.	E-learning can help educate nurses in any geographical location. It also provides flexibility as nurses can complete the courses in their own time. The authors did cite that the courses are stand-alone and hence, there is no collaboration in learning which can provide opportunity to learn from others. They also cited that strict quality control of learning materials need to be maintained.
Strengths/Limitations	Strengths—the study has a large sample population however, only less than 2% are from other countries. This study is a beginning research base for further investigation on innovative teaching strategies that can be used in nursing education. Limitations—global participation is needed for a similar research to gain an	Strengths—the authors had 11,000 participants in this article. Limitations—The online learners may have characteristics such a having increased motivation to learn that cannot applied to the wider nursing population and their comments may not be reflective of the general nursing population.

	international and more diverse perspective.	
Funding Source	National League for Nursing's Nursing Education Research Grant Program	Nurse Learning, a UK based charity organization
Comments	In the capstone project, evidence-based content will be included in the educational intervention. The home health nurse participants will also be asked of real cases of ostomy patient issues they have encountered. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.	In using online learning as a method of delivering education, Internet connection speeds and the learners' equipment capabilities or the technological requirements needed to run the online course need to be considered. The technological ability of the learner must also be factored in when designing online teaching programs. In the capstone project, in addition to the educational session done in person by the CWOCN with the home health nurses as learners/audience, other resources such as DVDs, brochures, online educational offerings will also be included as resources or possibly integrated in the educational intervention.

Article/Journal	Nurse practitioner preferences for distance education methods related to learning style, course content, and achievement. *The Journal of Nursing Education*.	Learning to live with a permanent intestinal ostomy: impact on everyday life and educational needs. *Journal of Wound Ostomy & Continence Nursing*.
Author/Year	Andrusyszyn, M. A., Cragg, C. E., & Humbert, J. (2001).	Danielsen, A. K., Soerensen, E. E., Burcharth, K., & Rosenberg, J. (2013).
Database/Keywords	CINAHL, Medline, PubMed/nurse; education; learning style	CINAHL, Medline, PubMed/ostomy; stoma; education
Research Design	Mixed-methods study	Qualitative study
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To investigate the relationships among multiple	To explore the impact of a permanent stoma on patients'

	distance delivery methods, preferred learning style, content, and achievement was sought for primary care nurse practitioner students.	everyday lives and to explore their need for further ostomy-related education.
Population/Sample size Criteria/Power	86 Canadian nurse practitioner students participated in the study/No power cited	15 participants in a Danish hospital/No power cited
Methods/Study Appraisal Synthesis Methods	The participants were given a researcher-designed questionnaire that investigated distance learning education methods as they related to content, learning style, course content and academic achievement. There were 6 participants who engaged in the follow-up interviews.	The focus group interviews used a phenomenological hermeneutic approach. Content analysis was used in data collection and analysis.
Primary Outcome Measures/Results	The most preferred method was print-based materials and the last preferred method was audio tape. The most suited for content included video conferencing for counseling, political action, and transcultural issues; and videotape for physical assessment. The participants stated that convenience, self-direction and timing of learning were more important than style of learning or delivery method. The preferred order of learning were reading, discussing, observing, doing, and reflecting.	The participants worried about disclosure, feelings of being stigmatized for having an ostomy, losing control, and having many limitations in their lives after the stoma surgery. The participants stated that lay teachers with a stoma and group-based learning sessions will be helpful in patient education.
Conclusions/Implications	When designing distance courses using different teaching methods is important. The educator should also consider the state of technology. The content of the program must also be appropriate to the delivery method used. The	Self-imposed isolation is common among ostomates. Being able to communicate with a lay ostomate is helpful in coping with a new ostomy and interacting with other ostomates is useful in patient education.

	characteristics of the learners must also be considered in designing learning programs.	
Strengths/Limitations	Strengths—Different methods, contents, and learning style were explored in this study. Limitations—The tool used may need refinement to improve its reliability. The study only included Canadian nurses enrolled in a specific course and the findings may not be generalizable to the whole nursing population.	Strengths—The foci of the study are important aspects to consider in caring for ostomy patients. Limitations—This study only had 15 Danish patients and the findings may not be generalizable to the rest of the ostomy population.
Funding Source	NODE Learning Technology Network	None disclosed
Comments	In designing learning programs, student choice of delivery methods should be considered when possible. Different teaching approaches may be appropriate to specific learning outcomes such as interaction for attitude change or deliberation for political action The use of different educational tools such as brochures, printed hand-outs, online educational offerings, live demonstration, and live lecture will be integrated into the capstone project's educational intervention.	In the capstone project, education of home health staff nurses should include information regarding community resources such as ostomy support groups. There must also be an emphasis on including emotional support as the staff cares for the ostomates in the home setting.

Article/Journal	Registered Nurses' views on their professional role. *Journal of Nursing Management.*	Standing on one's own feet: New graduate nurses' home health care challenges and work experiences study. *Home Health Care Management & Practice*
Author/Year	Furåker, C. (2008).	Sneltvedt, T., Odland, L. H., & Sørlie, V. (2010)
Database/Keywords	CINAHL, Medline, PubMed/home health nurse;	CINAHL, Medline, PubMed/home health nurse;

	competency	competency
Research Design	Qualitative study	Qualitative study
Level of Evidence	Level 6	Level 6
Study Aim/Purpose	To describe the everyday work of the home health nurses (RNs) and their views on what skills they use, require and wish to develop.	To investigate the work experience of recently graduated nurses as they now work.
Population/Sample size Criteria/Power	20 RNs who work in the home setting in western Sweden/No power cited	Four recently qualified Norwegian RNs who are now home health employees/No power cited
Methods/Study Appraisal Synthesis Methods	The 20 RNs were individually interviewed. Their interviews were subjected to content analysis.	This is a phenomenological hermeneutic study that explored the nurses' work experience in home health. They were interviewed and the texts were analyzed for themes.
Primary Outcome Measures/Results	The participants stated that most of their everyday work consisted of advance nursing care—making judgments, solving critical issues, and making appropriate assessments. The nurses supervise ENs or enrolled nurses. The nurses have a negative attitude to using evidence-based knowledge due to lack of time, heavy workload, and lack of economic resources for competence development. The nurses also stated that they are almost always alone when they work in patients' homes and this demand that they have high competency in their jobs.	The nurses were surprised by the competency requirements and expectations as well as the enormity of responsibilities they have as home health nurses. They also stated that they are mostly alone in their job. They find fulfillment in their work because they enjoy being a nurse; they are enjoying their jobs and were welcomed in the organization they work for.
Conclusions/Implications	Home health work demand that the RNs be highly competent. They are usually the only health professional in the patient's house and they	Home health nurses have extensive professional competency requirements. The job usually requires the nurse to work alone in the

	are required to make good health care decisions for the patients. They must also have good communication and relationship skills in addition to being competent professionally. The RNs in this study stated that they have a negative attitude to evidence-based knowledge because of constraints in time and resources.	home with the patient. The nurse is required to be responsible to make correct assessments, evaluations, and execute good interventions to problems seen.
Strengths/Limitations	Strengths—The participants were from both large and smaller communities in Sweden. They also have varying years of experience in home health. There were two researchers present in the individual interviews that give strength and credibility to the study. Limitations—The number of participants was small. The managers were asked to contacted interested participants and this may be seen as a weakness to the study.	Strengths—The study shed light to the work experiences of new nurses in home health. In this study, apparently in Norway, fairly newly qualified RNs can work as home health nurses. Limitations—The study was done in Norway with a small number of participants. The results may not be generalizable to most home health nurses globally.
Funding Source	None disclosed	Bodo University College, Faculty of Nursing, Norway
Comments	The home health RNs need to have increased competence in their healthcare related tasks in the home setting. They are usually working alone and have no easy access to resources to help them with their tasks as home health care providers. The intervention in the capstone project will provide them with more knowledge and skills that will increase their professional competence.	The study is useful in informing the challenges of working alone in the field as a home health nurse. In the capstone project, the goal is to equip the nurses with knowledge so they can increase their competency in caring for ostomy patients. The study highlights the fact that home health nurses are usually working alone and they are usually the only healthcare professional in the

		patients' home. Therefore, there are high expectations from them. In the capstone project, the aim of the educational intervention is to increase the home health nurses' competency in ostomy care. Another aim of the capstone project is to inform the home health nurses of the resources related to ostomy care that are available to them and the ostomates.

Article/Journal	Experiences of Swedish men and women 6 to 12 weeks after ostomy surgery. *Journal of Wound Ostomy & Continence Nursing*
Author/Year	Persson, E., & Hellström, A. L. (2002).
Database/Keywords	CINAHL, Medline, PubMed/home health nurse; competency
Research Design	Qualitative study
Level of Evidence	Level 6
Study Aim/Purpose	To describe the experiences of patients focusing on their body image, six to 12 weeks after a stoma operation.
Population/Sample size Criteria/Power	Nine patients were interviewed for this Swedish study/No power cited
Methods/Study Appraisal Synthesis Methods	The patients were urostomy, colostomy and ileostomy patients who will have their respective ostomy for at least 6 months. They were interviewed six to 12 weeks after the ostomy surgery. The interview was about 30 to 60 minutes. They were asked about their attitudes, feelings, and life experiences after the surgery.
Primary Outcome Measures/Results	The seven themes the authors identified were: alienation from the body, altered body image, influences on sexual life and social life as well as impact on sports and leisure activities, uncertainty, and physical problems.
Conclusions/Implications	Eight of the nine subjects received comprehensive preoperative teachings. However, despite this fact, the patients were still surprised by the ways the stoma impacted many aspects of their lives, and some of the participants also expressed difficulty accepting the stoma. The participants also expressed that talking to another ostomate will help them with education.
Strengths/Limitations	Strengths—The study shed light to the experiences of new ostomy patients as they learn to live with their ostomy. Limitations—The study was done in Sweden with a small number of participants. The results may not be generalizable to most home health nurses globally. The researchers had experience as ostomy care nurses and they cited this as a potential limitation because of their preconceived ideas about ostomy care.
Funding Source	None cited
Comments	The study is useful in informing clinicians about potential problems that ostomy patients face. This study also highlighted the importance of meeting fellow ostomates as helpful in learning about and coping with an ostomy. The ostomy support group in the local community is a good resource that home health nurses should know about.

Appendix B: Pre-/Post-Test

Ten-item test: Post-test of the online class, *Basic strategies for managing ostomy pouching problems: Associated with peristomal skin* by Debra Netsch, DNP, RN, AORN, CNP, CWOCN and Bonnie Sue Rolstad, MS, RN, CWOCN.

1) Skin stripping is noted in the 5-7 o'clock peristomal skin area. There is no leakage in the removed skin barrier. You teach the patient:

a) To use an adhesive remover with each pouch system change.
b) Push the skin away from the skin barrier instead of pulling it off.
c) Use antimicrobial soap when cleansing the peristomal skin.
d) Add a belt to the pouching system.

2) A peristomal skin retraction is located from 2-10 o'clock and you assess skin denudement in that same area. Your objective in managing this situation would be to:

a) Fill the area to create a level surface for pouching.
b) Bridge the area by laying a skin barrier over the top of the retraction (moat).
c) Refer the patient as surgery is likely needed.
d) Change the pouching system more frequently.

3) Recommended routine product used in the peristomal skin include:

a) Water only.
b) Skin sealant.
c) Baby shampoo.
d) Antibacterial soap.

4) Ostomy powder should be utilized;

a) With each pouching system change.
b) To increase pouching system wear time.
c) Whenever the patient has itching of the peristomal skin.
d) When peristomal skin maceration is present.

5) Creases are located at 3 and 9 o'clock of the peristomal area. An appropriate intervention would be:

a) Surgical repair of the peristomal area.
b) Skin barrier strips to fill the creases.
c) Changing the pouching system twice a day.
d) Crusting the peristomal skin.

6) Skin sealants are indicated:

a) Whenever an adhesive pouching is utilized.
b) Only when the pouching surface is intact.
c) Only when the pouching surface is open and weeping.
d) When mechanical stripping is a concern.

7) When the abdomen is firm, this would indicate a need for a:

a) Firm skin barrier.
b) Firm convexity.
c) Flexible skin barrier.
d) Paste and a belt.

8) Assessment of the removed pouching system will help to:

a) Identify the location of the leakage.
b) Determine the patient's stoma type.
c) Locate the mucocutaneous junction.
d) Determine the frequency of pouch emptying.

9) A peristomal skin characteristic that may result in pouching system leakage is:

a) Firm tissue.
b) Soft tissue.
c) Reddened area.
d) Skin retraction.

10) Abdominal topography should be examined with the patient;

a) Standing only.

b) Laying supine only.

c) In multiple positions.

d) Walking.

Appendix C: Letter from Bonnie Rolstad to Approve Use of the Test for this Study

Earlam, Armi S

From: Josh Rolstad <jrolstad@webwocnurse.com>
Sent: Friday, May 30, 2014 10:18 AM
To: Earlam, Armi S
Subject: RE: salamat

Armi,

Here is Bonnie's response:

Dear Armi,

Congratulations on your coursework as you complete your DNP! This is an excellent career path and we wish you all the best.

We are eager to learn more about your project as it is of interest to us also. What semester are you in? What are the time frames on your project and plan for completion? Do you plan to publish these results? Yes, you may utilize our quiz, but with credit given to our Program. Additionally, we would appreciate being included in the results of your study. This is a very important topic for nurses and we look forward to hearing more as you progress. Please let us know which CE offering quiz you will be utilizing.

All CE's on the webWOC Continuing Education Program website are owned by webWOC Continuing Education Program. This is a one-time permission for this specific project and may not be shared with other parties without the express written permission from our Program.

The very best to you in your research endeavors!

BONNIE SUE ROLSTAD, MS, RN, CWOCN
President and Faculty, webWOC Nursing Education Program
Metropolitan State University
School of Nursing, College of Health, Community and Professional Studies
Lake Calhoun Center
3033 Excelsior Blvd, Suite 460
Minneapolis, MN 55416

612--331-4601 (o)

Appendix D: Demographic Survey

Demographic Information

Please read the following questions. There are three pages in this demographic information questionnaire. Select your answer by checking only one box that applies to you. Please answer ALL questions. Any missing information will mean exclusion of your entire data from the study.

If you need to erase an answer, put a horizontal line across the former answer and check the correct one.

See example below:

Do you like ice cream?

☑ Yes

~~☐ No~~

The following are the demographic questions.

What is your age?

☐ 25 or under

☐ 26-35

☐ 36-40

☐ 41-55

☐ 56 or older

What is your gender?

☐ Male

☐ Female

☐ Other

Current position in the home health agency:

☐ Administration/management

☐ RN in the field

☐ LPN in the field

☐ Other

Highest educational level you completed?

☐ Associate's degree

☐ Bachelor's degree in Nursing

☐ Bachelor's degree non-nursing

☐ Master's degree in Nursing

☐ Master's degree non-nursing

☐ Doctorate degree in Nursing

☐ Doctorate degree non-nursing

If you are currently a LPN, how long have you worked as a LPN?

☐ Less than one year

☐ 1 year to 5 years

☐ 5 years to 10 years

☐ 10 years to 15 years

☐ Over 15 years

If you are currently a RN, how long have you worked as a RN?

☐ Less than one year

☐ 1 year to 5 years

☐ 5 years to 10 years

☐ 10 years to 15 years

☐ Over 15 years

How long have you worked in home health?

☐ Less than one year

☐ 1 year to 5 years

☐ 5 years to 10 years

☐ 10 years to 15 years

☐ Over 15 years

Have you worked with a patient, family member, loved one, or friend with a colostomy, ileostomy or urostomy?

☐ Yes

☐ No

Have you had a colostomy, ileostomy, or urostomy yourself?

☐ Yes

☐ No

Appendix E: Evaluation Form

Title of Program:	Peristomal Skin Care

Date:		Time:

Contact hours: n/a

Program Objectives:

The objectives of the course were:	Fully Met	Partially Met	Not Met
Describe how to do routine peristomal skin care.			
Identify peristomal skin characteristics that complicate pouching system success.			
Identify causative factors, clinical features, and prevention/intervention measures for each of the following: a) contact dermatitis b) folliculitis c) fungal "yeast" dermatitis d) mechanical injury e) mucocutaneous junction separation			
Identify factors in selecting a pouching system for an individual patient.			

Topic Evaluation:

Peristomal Skin Care	Excellent	Very Good	Good	Fair	Poor
Topic of Interest					
Provided new information					
Applicable to Personal Practice					

Speaker Evaluation:

Speaker: Armi S. Earlam RN, BSN, CWOCN, MPA, DNP-C	Excellent	Very Good	Good	Fair	Poor
Speakers' preparation and knowledge of topics					
Easy to understand					
Responsive to questions					

Strong/Weak Points of Presentation:_____

_____

_____

What will you do differently as a result of this presentation?

_____

Appendix F: Budget

Projector--$300

Screen projector--$150

Food and drinks for approximately 10 HH agencies--$500 **(Some agencies provided their own food)**

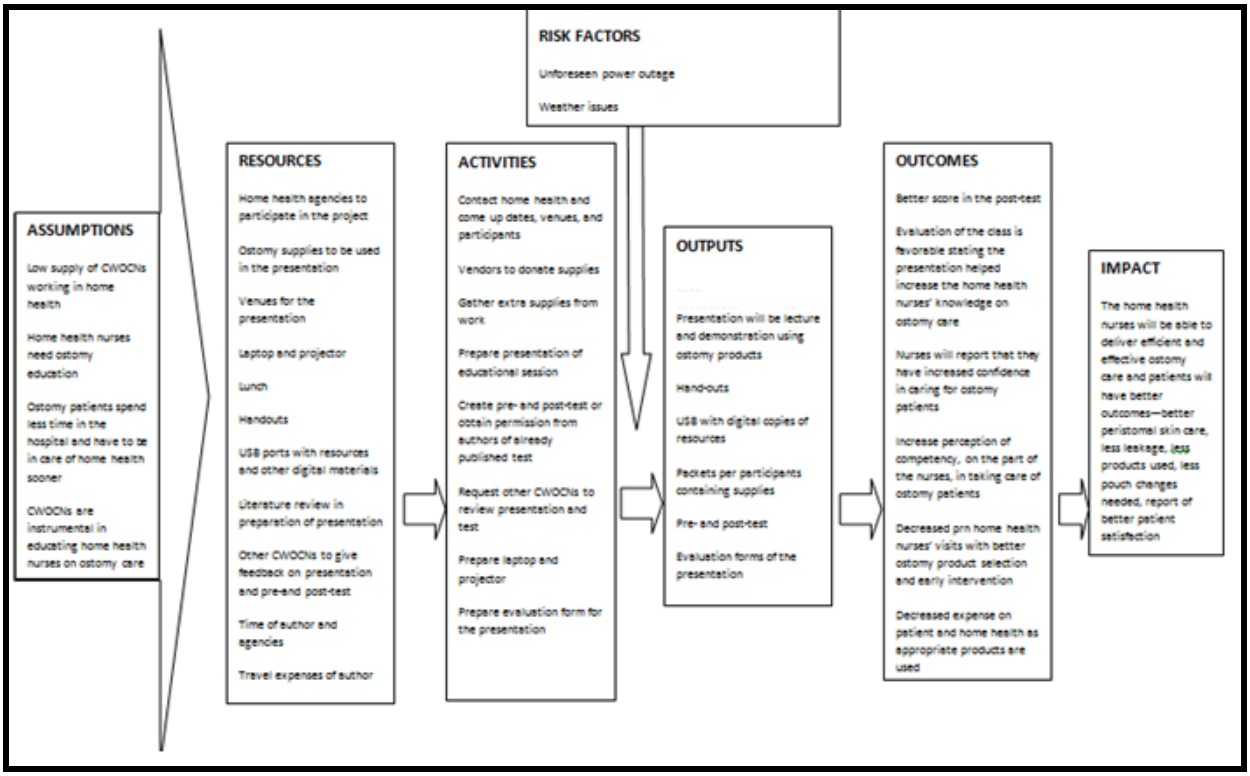
Memory stick and hard copies of materials--$700

Pens, folders, mailing thank you notes--$200

TOTAL COST=$1,850

The ostomy supplies were donated by the ostomy products manufacturers. This author already has some unused ostomy supplies available to her.

Appendix G: Logic Model



Appendix H: Regis IRB Approval Letter

REGIS UNIVERSITY

OFFICE OF ACADEMIC GRANTS

IRB – REGIS UNIVERSITY

May 15, 2015

Armi Earlam
7889 West Newberry Circle
Lakewood, CO 80235

RE: IRB #: 15-154

Dear Ms. Earlam:

Your application to the Regis IRB for your project, "Educating Home Health Nurses on Peristomal Skin Care", was approved as an exempt study on April 7, 2015. This study was approved per exempt study category of research 45CFR46.101.b(#2).

The designation of "exempt" means no further IRB review of this project, as it is currently designed, is needed.

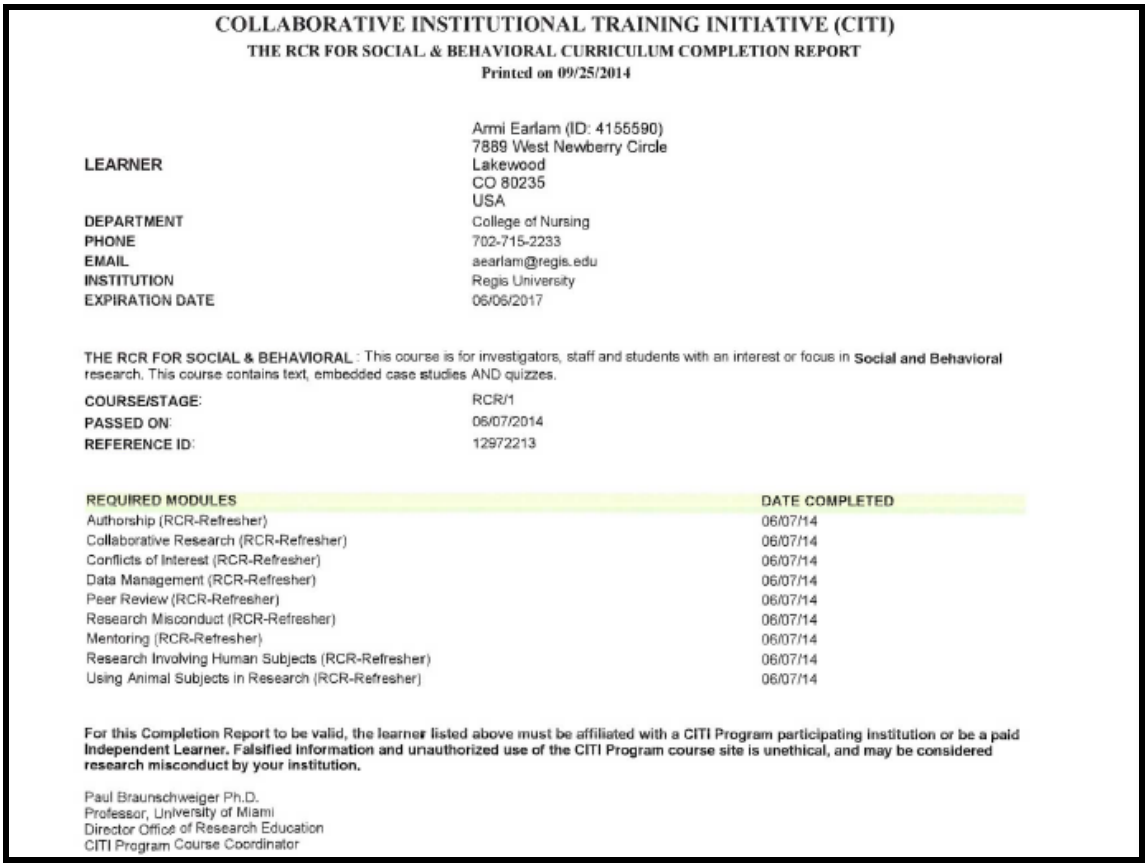
If changes are made in the research plan that significantly alter the involvement of human subjects from that which was approved in the named application, the new research plan must be resubmitted to the Regis IRB for approval.

Sincerely,

Patsy McGuire Cullen, PhD, PNP-BC
Chair, Institutional Review Board
Professor & Director
Doctor of Nursing Practice & Nurse Practitioner Programs
Loretto Heights School of Nursing
Regis University

cc: Dr. MaryJo Coast

Appendix I: CITI Certification



COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)

THE RCR FOR SOCIAL & BEHAVIORAL CURRICULUM COMPLETION REPORT

Printed on 09/25/2014

LEARNER	Armi Earlam (ID: 4155590) 7889 West Newberry Circle Lakewood CO 80235 USA
DEPARTMENT	College of Nursing
PHONE	702-715-2233
EMAIL	aearlam@regis.edu
INSTITUTION	Regis University
EXPIRATION DATE	06/06/2017

THE RCR FOR SOCIAL & BEHAVIORAL : This course is for investigators, staff and students with an interest or focus in **Social and Behavioral** research. This course contains text, embedded case studies AND quizzes.

COURSE/STAGE:	RCR/1
PASSED ON:	06/07/2014
REFERENCE ID:	12972213

REQUIRED MODULES	DATE COMPLETED
Authorship (RCR-Refresher)	06/07/14
Collaborative Research (RCR-Refresher)	06/07/14
Conflicts of Interest (RCR-Refresher)	06/07/14
Data Management (RCR-Refresher)	06/07/14
Peer Review (RCR-Refresher)	06/07/14
Research Misconduct (RCR-Refresher)	06/07/14
Mentoring (RCR-Refresher)	06/07/14
Research Involving Human Subjects (RCR-Refresher)	06/07/14
Using Animal Subjects in Research (RCR-Refresher)	06/07/14

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Program Course Coordinator

Appendix J: Letter to the Participants

Name of Home Health Agency

Dear RN/LPN participant:

I am completing my Doctorate of Nursing Practice studies at Regis University here in Denver, CO. As part of my capstone project, I am conducting an educational intervention (in-service) focused on peristomal skin care. My intervention will require a pre-test, a lecture and hands-on demonstration about peristomal skin care, a post-test, and an evaluation of the educational intervention.

My research will involve the use of a published test consisting of ten multiple choice answers. The test (only one test which will be used both in the pre- and post-test) will assess the knowledge of the participants regarding peristomal skin care. The information obtained will not be recorded in such a manner that the participants can be identified, directly or through identifiers linked to the subjects; and no disclosure of the participants' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Participation in this study is voluntary. The agency you are working for will not monitor your participation. There will be no sign-in sheet to document your participation. Participation in this study will not affect your employment status and you may drop out of the study at any time during the education and testing.

Your participation includes the following:

1) Before the education begins, you will be asked to provide information about yourself and take a test of your knowledge about peristomal care. The information you will provide will not have any personal identifier.
2) You will then listen to and participate in an education about peristomal care.
3) You will then be asked to complete a post-test (the same test that you took before the education).

4) All information obtained including pre- and post-testing, your personal demographic information, and your evaluation of the presenter (me) and the in-service will remain confidential.

5) Results of your tests, information in your demographic information sheet, and the evaluation of the presenter (me) and the in-service will not be shared with any other person or agency. All data will be kept in a locked secured box off site of the home health agency you are working for. All electronic analysis will be password protected and kept locked. The results of the project will be presented to my doctoral faculty and it is my hope to also publish the results of the project in scholarly journal/s as well as in a national and/or international nurse conference/s.

I am the principal investigator of this study. If you have any questions or concerns, my contact information is as follows: cell phone number 303-549-0022 or email at armi.earlam@sclhs.net or aearlam@regis.edu. My capstone chair is Dr. Mary Jo Coast. Her email is mcoast@regis.edu. Her work phone number is 303-458-4235. If you have any questions about your rights as a research subject you may contact the Regis University Institutional Review Board (IRB) at 303-964-3616 or by email at irb@regis.edu. The IRB Chair can also be contacted by mail at Regis University 3333 Regis Boulevard, H4, Denver, CO 80221-1099.

Thank you very much.

Sincerely,

Armi S. Earlam RN, BSN, CWOCN, MPA
aearlam@regis.edu or armi.earlam@sclhs.net
Cell phone: 303-549-0022

Appendix K: Letter to the Home Health Agency Management/Administration

Director of Clinical Services
Name of Home Health Agency

Dear Madame/Sir:

I am completing my Doctorate of Nursing Practice studies at Regis University here in Denver, CO. As part of my capstone project, I am conducting an educational intervention (in-service) focused on peristomal skin care. My intervention will require a pre-test, a lecture and hands-on demonstration about peristomal skin care, a post-test, and an evaluation of the educational intervention.

I would like to set up a time when I can present this important information to your nursing staff (RNs and LPNs). I also plan to bring food and drinks for this presentation.

My research will involve the use of a published test consisting of ten multiple choice answers. The test (only one test which will be used both in the pre- and post-test) will assess the knowledge of the participants regarding peristomal skin care. The information obtained will not be recorded in such a manner that the participants can be identified, directly or through identifiers linked to the subjects; and no disclosure of the participants' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

This research is voluntary. The participants' anonymity must also be protected. As such, I cannot have a sign-in sheet for this in-service. If there are staff members from your agency that missed this educational opportunity, I will be willing to come back after my DNP program, which will be around September 2015 onwards, to educate these staff members.

The results of the project will be presented to my doctoral faculty and it is my hope to also publish the results of the project in scholarly journal/s as well as in a national and/or international nurse conference/s.

I am the principal investigator of this study. If you have any questions or concerns, my contact information is as follows: cell phone number 303-549-0022 or email at

armi.earlam@sclhs.net or aearlam@regis.edu. My capstone chair is Dr. Mary Jo Coast. Her email is mcoast@regis.edu. Her work phone number is 303-458-4235. If you have any questions about your rights as a research subject you may contact the Regis University Institutional Review Board (IRB) at 303-964-3616 or by email at irb@regis.edu. The IRB Chair can also be contacted by mail at Regis University 3333 Regis Boulevard, H4, Denver, CO 80221-1099.

Thank you very much.

Sincerely,

Armi S. Earlam RN, BSN, CWOCN, MPA
ashearlam@hotmail.com or aearlam@regis.edu or armi.earlam@sclhs.net
Cell phone: 303-549-0022

Appendix L: Timeframe

October to December 2014—IRB approval, preparation of materials for the in-service
January to March 2015—editing of the materials for the in-service,
—practice the in-service with other CWOCNs and RNs of LMC/SCL as participants
—Recruitment of HH agencies
April to June 2015—project completed. In-services conducted in different agencies.
July to August 2015—completion of the results. Statistical analysis. Presentation of the results of the project to the Regis faculty.

The project's methods, results, and other related information was summarized in an abstract. The author will submit the abstract to the Journal of WOCN Society for consideration. The author plans to publish this project as a manuscript for the said journal. She also plans to present it as a poster in the WOCN national conference or international conference, pending approval of the WOCN Society.

Appendix M: Letters from Home Health Agencies Agreeing to Participate

Date 4/13/15

Our home health agency Astra Health Care

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature Michael Holman RN DOCS

Date 4/13/15

Our home health agency Super healthcare, Inc.

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature DON Zohreh Azizi

Date 4/13/15

Our home health agency 24/7 Home Health Care

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services _____

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature _____

Date 4-13-2015

Our home health agency Amazing Care Home Health

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services _____

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature JEANNE MEARDON Jeanne Meardon RN/DONS

Date 4/14/15

Our home health agency Complete Home Health Care

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services _____

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature _____ RN CS

Date 4/13/15

Our home health agency Berkley Home Health Care

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services _____

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature Barbara J Hernandez

Date 4/15/2015

Our home health agency SCL Home Health

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services Director of Nursing

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature Lydia S. Zefeldt RN

Date 05/28/2015

Our home health agency Professional Home Health Care.

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services Tyson Morgan

(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature Tyson Morgan

Date 4/13/2015

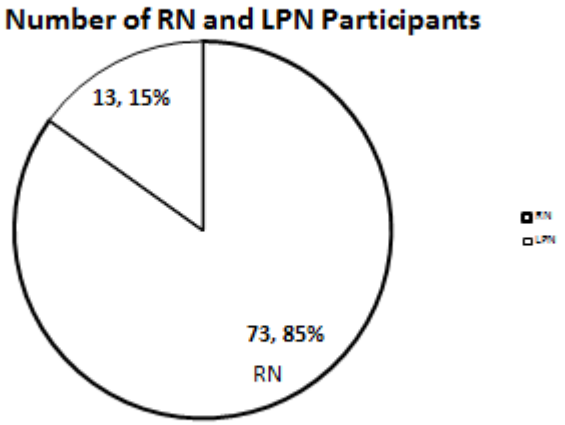
Our home health agency Human Touch Home

agreed to participate in the capstone project of Armi S. Earlam. Her study Educating Home Health Nurses on Peristomal Skin Care is part of her Doctorate of Nursing Practice requirements. I have read and understood the letter she sent me as the Director of Nursing/Clinical Services _____

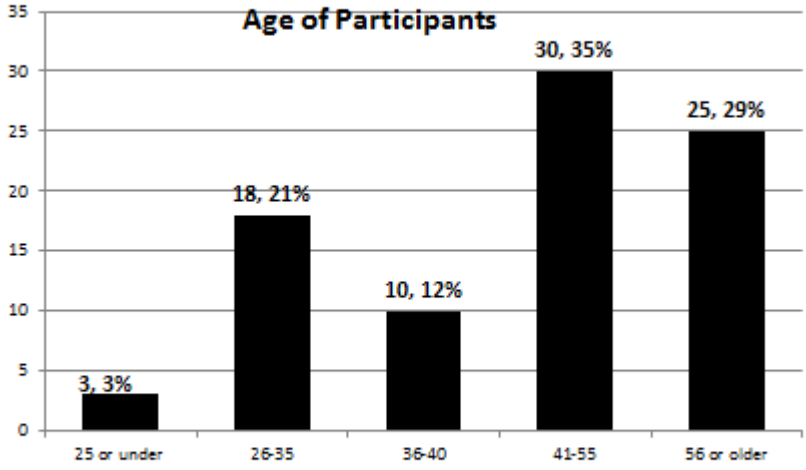
(insert name of position here, if other than Director of Nursing/Clinical Services). I have also read and understood her letter to the participants.

Name and signature Marketta C Karl, RN DES

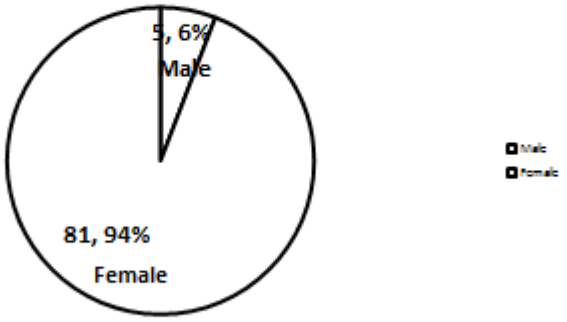
Appendix N: Summary of the Data from Demographic Form



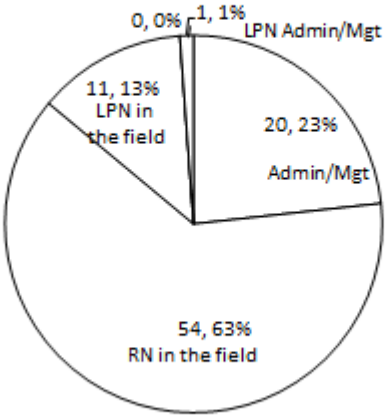
N=86. There were 13 LPNs and 73 RNs

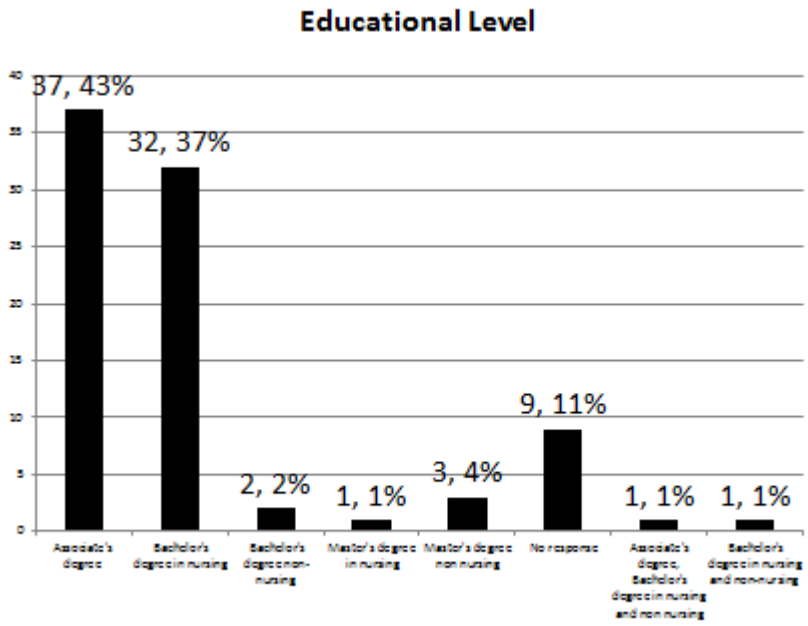

Age of Participants
35
30
25
20
15
10
5
0
3, 3%
18, 21%
10, 12%
30, 35%
25, 29%
25 or under
26-35
36-40
41-55
56 or older

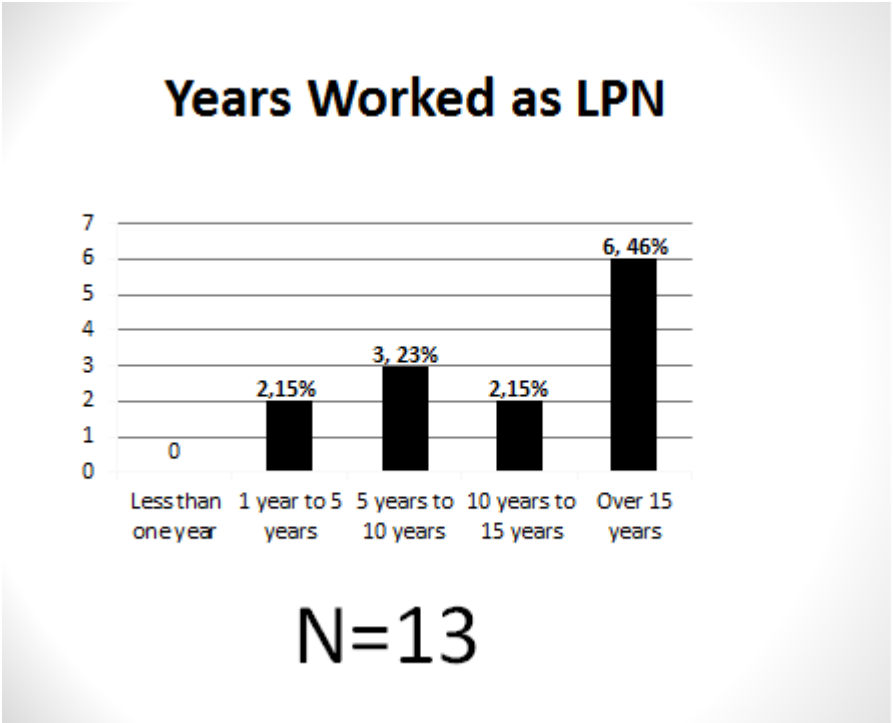
Gender of Participants



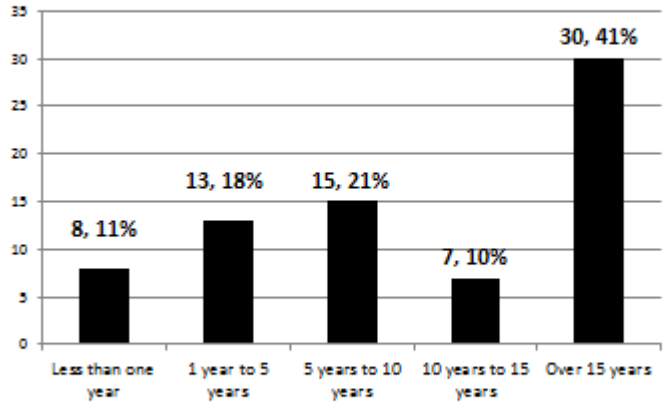
Position in the Home Health Agency




Educational Level
37, 43%
32, 37%
2, 2%
1, 1%
3, 4%
9, 11%
1, 1%
1, 1%
Associate's degree
Bachelor's degree in nursing
Bachelor's degree non-nursing
Master's degree in nursing
Master's degree non nursing
No response
Associate's degree, Bachelor's degree in nursing and non nursing
Bachelor's degree in nursing and non-nursing

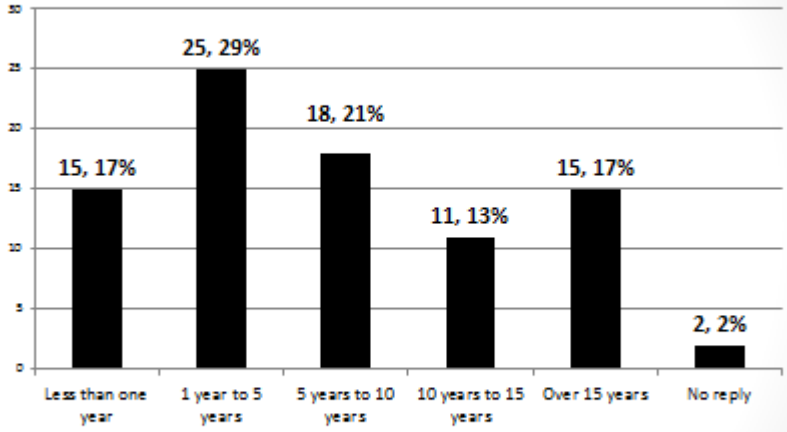

Years Worked as LPN
0
2,15%
3, 23%
2,15%
6, 46%
Less than one year
1 year to 5 years
5 years to 10 years
10 years to 15 years
Over 15 years
N=13

Years Worked as RN



N=73

How long have you worked in Home Health?



N=86