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Does Preoperative Ostomy Education Decrease Anxiety in the New Ostomy Patient?

Michelle Suzann Harris

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DOES PREOPERATIVE OSTOMY EDUCATION DECREASE ANXIETY IN THE NEW
OSTOMY PATIENT?

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April 2019

ABSTRACT

DOES PREOPERATIVE OSTOMY EDUCATION DECREASE ANXIETY IN THE NEW OSTOMY PATIENT?

Background: There are approximately 100,000 patients with new ileostomies and colostomies created in the United States each year. These patients have specialized needs that include acceptance of altered body image, psychological stress, learning of difficult tasks, and occasionally an ominous diagnosis leading to the need for surgery. In addition to pre-surgical stoma site marking on the abdomen, ostomy nurses have identified early education to be an important factor in long-term success and management of the patient. Early education and stoma site marking may assist with a better-situated stoma leading to fewer complications related to appliance adherence and leakage. New ostomy patients that are well prepared may be able to adapt to the new body image and are more successful in management following ostomy surgery.

Problem: Psychologists and sociologists have identified a link between anxiety levels and memory. Anxiety can affect learning by interfering with the attention process of the brain. This interference can hinder the ability of ostomy patients to effectively listen, learn, and perform ostomy care for themselves which places an increased demand on family, caregivers, and home health nurses. Pre-surgical education may offer reduced anxiety levels in post-operative patients, which may provide an improved environment for learning.

Methods: Participants considered for study inclusion were those scheduled for ostomy surgery. Patients in Group 1 were provided with pre-surgical ostomy education and routine pre-surgical education, whereas patients in Group 2 were provided with routine pre-operative education only. The Hospital Anxiety and Depression Scoring tool (HADS) was administered during the post-

operative period. The surveys were administered by a certified wound, ostomy, continence nurse practitioner. Analysis of Variance (ANOVA) was used to compare changes in anxiety scores between the two groups.

Results: Of the 30 participants in the study, 22 were male (73.3%) and 8 were female (26.7%). The mean age was 65.27 ± 9.97 for Group 1 and 61.87 ± 17.56 for group 2. This difference was not statistically significant ($p > 0.05$). Both groups had an equal number of males ($n=11$) and females ($n=4$). Group 1 consisted of 9 colostomy patients, 4 ileostomy patients, and 2 urostomy patients. Group 2 consisted of 10 colostomy patients, 4 ileostomy patients and 1 urostomy patient. Patients who had pre-surgical ostomy education had statistically significant lower post surgical anxiety scores than patients who had standard education ($p < 0.001$).

Conclusions: The findings of this study suggest that offering pre-operative ostomy education in addition to routine pre-operative education, significantly lowers anxiety when compared with patients who do not receive the pre-operative ostomy education.

Michelle Harris

August 2018

DOES PRE-OPERATIVE OSTOMY EDUCATION DECREASE ANXIETY IN THE NEW
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by

Michelle Suzann Harris

A project

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APPROVED

For the California State University, Northern Consortium
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Dedication

This doctoral project is dedicated to my husband and children; Michael, Dillon, Tristan, Taylor and Aaron who went on this journey with me every step of the way.

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Does Pre-operative Ostomy Education Decrease Anxiety in the New Ostomy

Chapter 1: Introduction

There are approximately 100,000 new ileostomies and colostomies created in the United States each year (Sheetz et al., 2014). This statistic does not include new urostomies or a stoma created from other sections of the bowel, which could bring the statistic to as high as 120,000 annually (Sheetz et al., 2014). These patients have specialized needs that are specific to the ostomy population. These needs include issues related to altered body image, psychological stress, difficult tasks that the patient must learn, and occasionally an ominous diagnosis leading to the need for surgery. A specific area of nursing has developed to address the needs of this very special population; these nurses are educated in ostomy care education and treatment. Ostomy nurses have identified the importance of pre-surgical stoma site marking on the abdomen for long-term success for these patients, in addition to, early education for overall long-term success in management (Colwell & Gray, 2007). Early education and stoma site marking may assist with a better-situated stoma leading to fewer complications related to appliance adherence and leakage (Colwell & Gray, 2007). Early education may have an impact on the long-term and immediate success of the patient. Education provided in the pre-operative phase may assist to reduce the patient's anxiety, therefore, enabling the patient to learn to care for the stoma earlier.

Background

Psychologists and Sociologists have identified a link between anxiety levels and memory performance (Kizilbash, Vanderploeg, & Curtiss, 2002). Anxiety can affect learning by interfering with the attention process of the brain (Kizilbash et al., 2002). This interference may hinder the ability of the patient with a new ostomy to effectively listen, learn and demonstrate the

ability to perform ostomy care. Increased demand on family, caregivers, and home health nurses may be needed when the patient cannot care for himself or herself. Pre-surgical education may offer reduced anxiety levels in the post-operative patient, which may provide an improved environment for learning (Rashidi, Long, Hawkins, Menon, & Bellevue, 2016).

This study explores patients who are undergoing ostomy creation surgery and may have anxiety about returning home and managing their ostomy. Often an ostomy can lead to issues with body image, self-esteem and sexual desire. Ostomy education is not usually given until the post-operative period in which the patient may be experiencing a high level of anxiety about the new ostomy and how they will care for themselves. This is often exacerbated by taking pain medication, leading to difficulty understanding the education offered during the post-operative time period. These issues may lead to increased anxiety levels and an inability to learn.

Routine education pre and post surgically is tied to the Enhanced Recovery After Surgery (ERAS) initiative. ERAS is an international non-profit professional organization that has developed and promoted a change to surgery planning that enhances recovery and shortens hospital length of stay by 30% to 50% (Ljungqvist, Scott, & Fearon, 2017). The ERAS initiative is being utilized by federal programs, such as Medicare and Medicaid to assist in shortened stays and reduced readmissions ((Kizilbash, Vanderploeg, & Curtiss, 2002) The ERAS program looks at several surgical practices and has made some significant changes to include carbohydrate drinks prior to surgery, the most minimally invasive approach to care, management of fluid throughout recovery, leaving in drains and tubes longer, early mobilization, food and drink the day of operation and, as related to this project, early education in the pre-surgical phase (Bernard & Foss, 2014). ERAS is a well-studied initiative that has identified that early education in surgery patients leads to better outcomes and earlier discharges. This study will not only focus

on early routine education as suggested by ERAS, but will also focus on the addition of ostomy education in the pre-surgical phase to reduce anxiety in the post-operative phase.

Problem Statement

Patients who undergo ostomy creation surgery have anxiety about returning home and managing their ostomy. Often an ostomy can lead to issues with body image, self-esteem and sexual desire. Ostomy education is not usually given until the post-operative period in which the patient may be experiencing a high level of anxiety about the new ostomy and how they will care for themselves. Patients are often concerned they will not be able to care for themselves or resume prior social activities. These issues and concerns may lead to increased anxiety levels and an ability to learn.

Purpose of the Study

The purpose of this study is to assess if offering ostomy education related to the ostomy surgical procedure, care and management, and products related to a new ostomy in the pre-surgical stage will affect the anxiety experienced in the patient post surgically. The goal of this study is to determine if ostomy education in addition to routine pre-education should be offered when surgery is needed to patients in need of an ostomy. This study will compare patients that receive ostomy education and routine pre-operative education to patients that receive routine pre-operative education without the pre-operative ostomy education and compare anxiety levels using an anxiety assessment questionnaire during the post-operative period. The questionnaire will be administered prior to any post-operative ostomy education is given. An existing anxiety-scoring tool will be used and data collected by the Ostomy Nurse.

Theoretical Framework

The nursing theory used to guide this project is: The Theory of Interpersonal Relations by Hildegard E. Peplau. Peplau's theory is highly adaptable and can be applied to many areas of nursing including, practice, education and research (Nelson, 2018). According to Peplau, the main task of the nurse is to ensure the patient reaches their fullest potential and level of function within the ability of the patients current condition (Nelson, 2018). The relationship between the nurse and patient should be grounded in communication. Peplau relates this as a therapeutic relationship and is a task to develop learning, trust, collaboration, and communication between the nurse and the patient (Deane & Fain, 2016).

Hildegard E. Peplau is known as the mother of psychiatric nursing and wrote her seminal book titled 'Interpersonal Relations Model' in 1948, and was published in 1952 ("Nurses Information," 2018). Her theory is considered a middle range, descriptive classification theory ("Nursing Theory," 2017). Her theory has four distinct phases; they are the orientation phase, identification phase, exploitation phase and the resolution phase ("Nursing Theory," 2017). These phases are essential to this study as each phase is in relation to the time spent with the patient. In her orientation phase, this is the initial phase in which the nurse and the client meet. This phase sets up the relationship between the two and the success of the relationship. In this study, the orientation phase would begin in the preoperative setting in which this early enhanced education can begin, setting up the patient for success. The identification phase is a time in which the patient begins to understand what is happening and can begin to accept it ("Nursing Theory," 2017). This is during the second encounter with the nurse after surgery. Without the preoperative session, this process would be delayed in the patients' progress.

The exploitation phase and the final phase continue during the post-operative encounters with the patient. The exploitation phase is a time of continued educational sessions with the patient to allow them to obtain independence. This is only successful if the first phase has been solidified and successful. The anticipation of the final phase of resolution comes with a step-by-step process, which begins in the preoperative time period.

Four characteristics of Peplau's interpersonal relations theory are identified in her theory. The characteristics involve a relationship between the nurse and the patient. The first characteristic is communication by way of conversation (McCarthy & Aquino-Russell, 2009). This is a two-way communication between the nurse and the patient to ensure all needs are met. The second is the 'type' of relationship that exists (McCarthy & Aquino-Russell, 2009). The relationship between the nurse and the patient should be professional and open. The third characteristic is a need to learn (McCarthy & Aquino-Russell, 2009). The nurse and the patient can learn and grow from each other; this is harvested in good communication. Lastly is characteristic four, which is an opportunity for human connection (McCarthy & Aquino-Russell, 2009). By keeping the fourth characteristic of Peplau's theory as a center point, connection, communication, and face-to-face interactions become part of the process.

Chapter 2: Literature Review

The Literature Review is a critical component of the research process that provides an in-depth analysis of recently published research findings relevant to the proposed study and the phenomenon of interest. For this study eleven research studies have been identified as relevant to the topic, each study will be discussed and summarized. While there is a great deal of literature available to support preoperative education, there is no specific literature available related to presurgical ostomy education and its effects on anxiety.

The study entitled, learning to live with a permanent intestinal ostomy: impact on everyday life and educational needs, conducted by Danielsen, Soerensen, Burcharth, & Rosenberg, (2013), was a qualitative hermeneutic study using focus group interviews. The sample characteristics included 15 subjects with permanent ostomies. They were recruited from the surgical department of a large hospital in Denmark during an outpatient ostomy clinic visit. There were eight women and seven men in the study with a median age of 66. The setting took place in a single large tertiary care center. Data was collected through sessions of open-ended interviews using phenomenological and hermeneutic techniques to capture pertinent patient experiences. The interviews were conducted in a group setting by an experienced interviewer and an observer. The data analysis was conducted using qualitative content analysis and thematic analysis to identify themes in the content. The open ended interviews used in the group setting revealed the following two major themes: 1) feelings of being different and, 2) training is effective in living with a stoma. The study revealed feelings by the participants of stigma, isolation higher need of control in appearance, difficulty in relationships, and a need to identify with other ostomy patients. A strength identified in the study was the population was with 15 people and the researcher identified the data collection as saturated. A limitation of the study is that the researcher identified that the findings may not be transferable to all persons living with an ostomy (Danielsen et al., 2013).

Crawford et al., (2012) conducted a study entitled: Traditional nurse instruction versus 2 session nurse instruction plus DVD for teaching ostomy care. The researchers set out to explore different types of nursing education in the ostomy patient. The methods utilized in the study were a randomized control trial conducted using a post-test only experimental design. The sample consisted of 88 adults with new ostomies randomly assigned to one of two groups. Of the 88

participants, 68 completed the study. The groups were equally split between men and women and the age ranged from 23 to 84 years old. There were 23 colostomy patients and 45 ileostomy patients that were all independent in self-care prior to the study. The setting included surgical units from multiple hospital sites within one healthcare organization. One group used a DVD and 2 session nursing instruction to prepare the patients for the surgery. A second group was prepared using traditional nursing instruction in pre-operative ostomy care. Data was triangulated by using three different instruments to gather information regarding patient's knowledge, skills and confidence in ostomy care. These included a knowledge test, direct observation ostomy management, and the patient performing self-care. The knowledge test had 13 multiple-choice questions and was validated from previous research studies. The data was collected and analyzed using independent sample t tests. ANOVA (analysis of variance) was used to determine differences between the groups. The results of the study concluded that first time ostomy patient education done post-operatively by a nurse is just as effective as nurse instruction plus DVD method. A strength identified in the study was the research design was robust and vigorous, while a limitation identified was there was a high attrition rate of the subjects, 22.7% (Crawford et al., 2012).

A mixed methods approach was used in a study entitled: Developing patient education to enhance recovery after colorectal surgery through action research (Poland et al., 2017). The researchers explored the aspects of early education in the colorectal patient and questioned whether enhanced confidence promoted proactive involvement of the ostomy patient. This study utilized a variety of data collection methods including; observations, questionnaires, interviews, focus groups and documentation review. The sampling consisted of 97 patients, 19 caregivers and 22 clinical staff within a 1200 bed community hospital, which serviced

surrounding rural counties. The patients' chosen were undergoing colorectal surgery. The staff participants were selected based on their relevant experience in colorectal surgery and ostomy care. The data was collected from the setting of the single hospital unit. The data collection methods included questionnaires, interviews, focus groups and documentation review. The interviews and focus groups were audio recorded and transcribed for themes at a later time. A research team of six members transcribed the audio recordings and reviewed the questionnaires. The data analysis used thematic analysis to identify themes in the study and continued until saturation was reached. The study resulted in two broad themes: 1) participants perceptions of successful practice in delivering patient education, and 2) areas identified by participants for improving practice. Within these two broad themes three sub themes were identified. The study identified that patients desired to be actively involved with their recovery and to develop an understanding of the surgical process. Lastly, that understanding the surgical process, increased patients' confidence in managing their own care post operatively. A strength identified in the study is the triangulated design and large number of participants in the study. A limitation identified was the exclusion of some participants due to literacy issues, which could have added additional perspectives to the study data (Poland et al., 2017).

The next study reviewed was entitled, stoma creation: does onset of ostomy care education delay hospital length of stay? Was conducted by (Rashidi et al., 2016). This is a quantitative retrospective research study design utilizing chart review. The sampling consisted of all the patients' charts within a Seattle, Washington hospital, who had undergone minimally invasive ostomy surgery between January 2011 and January 2105. The data collected from the sample included, the patient demographics, American Society of Anesthesiologists (ASA) score,

weekday of operation, initial visit with ostomy nurse, number of visits with ostomy nurse, and length of stay.

The data was collected for the study retrospectively and cases were placed into three groups. Group 1 were patients who had surgery on Monday, Tuesday or Wednesday, group 2 were patients who had surgery on Thursday and group 3 were patients whose surgery took place on Friday. Data analysis was conducted using a two-tailed t-test for group difference comparisons. Correlations were also tested to assess associations between variables using ANOVA. Multiple regression was used to determine the most powerful predictors of patient length of stay. The findings of the study were that patients that had a delay in initial ostomy nurse visits resulted in increased length of stay, in addition to patients having surgery on Friday. The longer length of stay was attributed to lack of ostomy nurse education on the weekend. A strength identified in the study is the large number of charts reviewed for analysis in the study. A limitation identified is that the charts were reviewed over an extended period of time and the study was taken from retrospective sources (Rashidi et al., 2016).

Sheetz et al., (2014) conducted a quantitative study to explore if identifying surgical outcomes related to high rates of morbidity and mortality in ostomy surgery patients offered targets for improving quality. The method used was a retrospective cohort study design. The sample was patients undergoing ostomy creation surgery over a five-year period in 34 acute hospitals. The sample consisted of 4250 patients all over the age of 18, with both men and women, obtained from the Michigan Surgical Quality Collaborative prospective clinical registry between 2006 and 2011. Designated data-collection nurses that underwent rigorous training of data audits at participating sites did the data collection at the hospital level. The data collected included patient demographics, preoperative risk factors, laboratory values, perioperative factors

and events, and a 30-day postoperative morbidity and mortality. Data analysis involved utilizing regression analysis with a p-value of 0.05. The means were compared using t tests for continuous variables and chi squared tests for categorical variables. SPSS (Statistical Package for the Social Sciences) software provided the analysis of the data. The results of the study showed that mortality rates were higher for emergent cases compared to elective cases and highest for resections and Hartmann's procedures. This finding indicates that hospitals should implement more quality improvement practices in the area of ostomy and colorectal surgeries, implementing improved education and ERAS (enhanced recovery after surgery) programs. A strength identified in the study was the participant size and multiple hospital sites. A limitation of the study is that it was a retrospective study design (Sheetz et al., 2014).

The quantitative study conducted by Genz et al., (2017) explores what factors affect health related quality of life in persons living with ostomies. This study is a quantitative cross-sectional survey design method. The sample consisted of 827 ostomy patients from 5 provinces and cities in China from October 2010 to November 2012. The age range of the patients was 26 to 93 years old, consisting of both men and women. The setting was from rural hospitals settings in China. The data was collected utilizing the administration of the City of Hope quality of life ostomy questionnaire in the Chinese version, stoma self-efficacy scale-Chinese version, Ostomy adjustment inventory-Chinese version, social support revalued scale and the hospital anxiety depression scale (HADS), also in the Chinese version (Genz et al., 2017). All the tools utilized were standardized tools validated in previous research studies and shown to be reliable and valid. The Chinese versions were used to ensure consistent validity. Four researchers were trained in the use of the data collection tools. The mean scores of the data were calculated using descriptive statistics. A multivariate analysis was conducted to evaluate the means of the five evaluation

questionnaires in the areas of gender, religious belief, marital status, psychological factors, depression and anxiety and specific issues related to social support and adjustment to an ostomy. The study concluded that health related quality of life issues were less than optimal and were heavily influenced by demographics and psychosocial issues. More education regarding health outcomes should be offered to patients undergoing ostomy surgery. A strength in the study was the large number of participants although there was a 12% attrition rate. A limitation in the study is that it only included Chinese patients, which limits transference to other populations also the cultural aspects of acceptance of an ostomy were not analyzed? (Genz et al., 2017).

Polat, Arpaci, Demir, Erdal, & Yalcin, (2014) conducted a quantitative study to explore if a patients' education before chemotherapy treatment for colorectal cancer have an impact of quality of life and anxiety and depression. The design method utilized was a quantitative longitudinal survey design method. The sample consisted of 65 patients with rectal or colon cancer that received chemotherapy between 2010 and 2011. The participants were informed and educated about treatment and disease and were followed for 6 months. The patients were recruited from the outpatient oncology center. Three questionnaires were used in the data collection of the participants one of which was the HADs scale. The first two questionnaires evaluated patient perceptions of quality of life and the HADs scale evaluated anxiety and depression scores. The mean scores of the data collection tools were calculated using descriptive statistics. A multivariate analysis was conducted to evaluate the means of each scale. The quality of life scores in the functional areas of the scales were lower in the 5th month of treatment than compared to the sixth month of treatment of the subjects. The findings showed that proper patient management (out patient ostomy education, support groups, home health nursing and supplies), quality of life score and anxiety and depression scores improve during treatment if

properly managed. A strength identified in the study was the use of 3 validated data collection tools. A limitation in the study was that the study was conducted on the out patient setting and could not be transferred to the in patient setting (Polat et al., 2014).

A meta-analysis was conducted by Gustafsson et al., 2013 in which studies were selected by the ERAS society for review of the evidence related to recommendations for enhanced recovery after surgery. The committee selected studies of meta-analysis, randomized controlled trials and large prospective cohorts. The perioperative treatment pathways were reviewed for best practice recommendations. The society used a literature search to include words like colon, enhanced recover and fast track to identify relevant literature for the meta-analysis (Gustafsson et al., 2013). Members of the society utilized the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) system to give recommendations for the ERAS of colonic surgery (Gustafsson et al., 2013). The committee through the review presented a comprehensive evidenced-based recommendation of perioperative care for colonic surgery.

A cross-sectional study of the impact of early involvement of patients in a post discharge support group of ostomy patients was conducted in 2018 (Rojanasarot, 2018). This study looked at support offered to post operative ostomy patients in relation to preventing complications such as readmissions. The researcher utilized a database of patients who underwent ostomy surgery within an 18-month timeframe prior to the survey date. Surveys were sent to 7026 program participants, with 493 responses (Rojanasarot, 2018). This was compared to patients not enrolled in a postoperative program, in which 4149 surveys were sent and 225 responded (Rojanasarot, 2018). The two groups were compared to hospital readmissions and ER visits post discharge. The participants were measured in two study periods, the first was in the first month of discharge and the second was after the first month post discharge (Rojanasarot, 2018). The findings of the

study suggested that patients enrolled in a post discharge ostomy support program could reduce return visits and readmissions. This study although looking at postoperative support, shows the significance of offering ostomy patients support and education during the process for better outcomes.

In 2013 a study was conducted to review the effects of bowel surgery or hospitalization for patients with Crohn's disease and ulcerative colitis in relation to risk of depression and anxiety (Ananthakrishnan et al., 2013). This was a large cohort study, which included patients from two large hospitals in Massachusetts. The study included 14,288 patients with Crohn's disease and 14,355 patients with ulcerative colitis (Ananthakrishnan et al., 2013). None of the patients included in the study had a previous diagnosis of anxiety or depression. A multivariate logistic regression analysis was performed to identify risk factors of the group members for depression and/or anxiety. The conclusion of the study showed that bowel disease related surgery or hospitalization was associated with a significant risk of anxiety and depression in patients for patients with both identified diseases (Ananthakrishnan et al., 2013). This study is essential in the literature review in that it has shown that individuals with no previous history of anxiety may develop anxiety in the hospital setting following surgery or diagnosis.

The final study included in this literature review is a similar study to this research in which patients undergoing spinal surgery were evaluated to determine if preoperative knowledge reduced anxiety in the patients (Kesanen et al., 2017). This similar study utilized an anxiety survey to determine the level of anxiety at the time of surgery. This study also looked at health-related quality of life, disability and pain (Kesanen et al., 2017). The study compared two groups, both groups received routine preoperative patient education, however the control group also received a feedback knowledge test assessment (Kesanen et al., 2017). Data was analyzed by

comparison of the means of the two groups using t tests and ANOVA. The study showed that if the patient had a higher level of knowledge prior to surgery the preoperative anxiety scores were lower, however the self-reporting of clinical outcomes such as quality of life, disability and reports of pain were not affected (Kesanen et al., 2017).

Gaps in the Literature

The eleven studies reviewed for the current investigation pertain either to anxiety and learning or methods to improve patient outcomes after surgery. Not all the studies reviewed included patients undergoing bowel or bladder surgery. However, it is clear that increased education prior to a surgical procedure is associated with reduced anxiety and improved outcomes (Ljungqvist, Scott, & Fearon, 2017).

The importance of preoperative education prior to orthopaedic and cardiac procedures has been well-documented in the ERAS literature (Ljungqvist, Scott, & Fearon, 2017). Research regarding postoperative education on the topic of ostomy creation supports the importance of ostomy education for patients and indicates that the earlier the education in surgical patients is associated with better outcomes (Ljungqvist, Scott, & Fearon, 2017). However, there are no studies in the current literature that assess the effects of preoperative education in this population.

There is also a lack of information of how anxiety affects the learning environment in the surgical setting. There are studies that explored anxiety and depression in the evaluation of bowel surgery patients in the post-surgical setting to address quality of life concerns related to depression but there is a lack of information regarding anxiety levels in this population undergoing ostomy surgery (Ananthakrishnan et al., 2013).

Positive outcomes from early presurgical interventions from an ostomy session with an ostomy nurse prior to surgery for stoma site marking have been documented. (Colwell & Gray, 2007) but whether the addition of education during stoma site marking session reduces post-operative anxiety is unknown.

The results of the review of the literature indicated that further research is necessary to understand whether to presurgical education improves outcomes and reduces the anxiety of patients who face ostomy surgery.

Chapter 3: Methods

Research Design

The research design was quantitative, prospective, causal-comparative. The study utilized a convenience sampling method based on referral by the surgeon for pre-surgical stoma marking.

Setting

The study took place in a large 385 bed tertiary hospital in Northern California. Study participants were admitted to various nursing units in the facility for ostomy surgery including medical, surgical, med-surg, telemetry and intensive care settings. The study was conducted between October 2018 and February 2019 under the guidance of a certified ostomy nurse.

Participants

Participants considered for study inclusion were patients scheduled for ostomy surgery. Participants referred for presurgical ostomy education were recruited into the study for Group 1, the interventional group (IG). Participants recruited after surgery at the post-operative educational session were included Group 2, the control group (CG) and received routine pre-surgical education only (Heavey, 2015). The surgeons that referred patients to the ostomy nurse

were pre-educated regarding the study to ensure subject enrollment goals were met. Subjects excluded from ostomy education were those with severe illness requiring emergent procedures, transfers from other institutions, and patient refusal of early education.

Variables

Dependent variable. The study dependent variable was the anxiety level score indicated on the Hospital Anxiety and Depression Survey (HADS) questionnaire.

Independent variable. The independent variable in the study was the pre-surgical ostomy education offered to IG during the preoperative education session.

Demographic variables. Demographic variables in the study included gender, age, postoperative day number of education, and type of ostomy surgery created.

Hospital Anxiety and Depression Scale

The HADS was designed by Zigmond and Snaith to measure anxiety and depression among patients in the general hospital setting (Stern, 2014). It has been validated in many settings, countries, communities and languages and is considered useful to diagnose anxiety during a hospital admission. (Stern, 2014) Permission to use the HADs questionnaires and instructions for use was obtained by the researcher. The HADS consists of 14 questions and is scored by adding up to totals for each question ranging from a score of 0 to 3. Scores range from 0 to 21 in anxiety. Higher scores indicate higher levels of anxiety. Although the HADS tool assesses both anxiety and depression, anxiety was the focus of the study and only the anxiety score was used for analysis.

Procedures

Informed consent was conducted during the initial encounter with patients according to the Sutter Health consenting guidelines. The ostomy nurse administered the consent either in the preoperative session or for patients in CG, during the postoperative education session. Data collection consisted of administering the Hospital Anxiety and Depression Scale (HADS) to assess anxiety levels after surgery during the postoperative teaching session. The researcher was the only administrator of the questionnaire to patients for data collection. The questionnaire took participants approximately 5 minutes to complete.

The researcher entered participants' responses into an Excel spreadsheet and calculated the total anxiety score. Data were imported into IBM SPSS 21.0 for statistical analysis. Frequency distributions, contingency tables, and means were used to assess for outliers and confirm that the distribution of the HADS scores met the requirements for parametric statistics. Analysis of Variance design (ANOVA) was used to compare the difference between the HADS anxiety scores in the IG versus the CG. Statistical significance for this study was predetermined at $p < 0.05$. ANOVA was also used to compare the mean differences between the groups in age and post-op day number.

Chapter IV: Results and Discussion

All participants approached for inclusion into the study agreed to participate and all 30 patients completed the study. There were 22 male (73.3%) and 8 female (26.7%) participants and each group had the same number of men and women (Table 1). Table 1 also shows that the majority of patients were having colostomy surgery and there were a similar number of patients having this type of surgery in both group. The mean age of participants in the study was 63.57 ± 14.14 . The mean age of the IG was $65.27 \pm SD$ and the CG was $61.87 \pm SD$ (Table 1). Results of the

ANOVA (Table 2) show that there was no difference in age between the groups but that post op day number was higher in the CG versus IG. Patients who had presurgical ostomy education had significantly lower anxiety scores than those who did not have the education.

Table 1. Demographics of study participants

	<u>Intervention Group</u>		<u>Control Group</u>	
	n=15		n=15	
	<u>n (%)</u>	<u>Mean ±SD</u>	<u>n (%)</u>	<u>Mean ±SD</u>
Age		65.27±9.968		61.87±17.562
Sex			73.3	
Male	73.3			
Female	26.7		26.7	
Stoma Type				
Colostomy	60		66.7	
Ileostomy	26.7		26.7	
Urostomy	13.3		6.7	
Post Op Day		2.60±1.404		4.07±1.792
HADS Score		4.67±2.257		15.47±4.502

Table 2. Results of analysis of variance

	F	df	p
Age	0.425	29	0.520
Post Op Day	6.228	29	0.019
HADS	68.985	29	0.000

Chapter 5: Implications and Limitations

Implications of Study

The results of this study suggests that early education related to ostomy care and management prior to surgery can offer reduced anxiety levels in the post-operative setting. These reduced anxiety levels may assist the patient during these critical post-operative days in learning to manage their ostomy at home. Early acceptance and involvement by patients may assist in reduction of hospital days of stay and hospital readmissions associated with lack of support. A study regarding involvement of post-discharge support programs showed that lack of a good support program at discharge can lead to readmission (Rojanasarot, 2018). Patients in a high anxiety state will not be able to participate in post-operative education and resources offered.

Patients should be referred for preoperative education prior to ostomy surgery. This preoperative education can be done in the outpatient setting or at the bedside. For patients arriving to the hospital in an emergent need, time may not allow for patient education but may be offered to the family prior to surgery. Often emergent cases have a short delay between emergency room and operating room, this is an opportunity for an ostomy nurse to meet with the

patient and begin a relationship that will continue to build following surgery. Preoperative education should be added to the routine preoperative plan as indicated with the ERAS initiative. ERAS has specific guidelines for colonic surgery, in which, detailed education prior to surgery is indicated (Gustafsson et al., 2013) Although under ERAS the education indicated is surgical procedure and what to expect, this study recommends offering education regarding the stoma creation, care of the stoma and obtaining supplies. Offering this ostomy education earlier may result in reduced anxiety as this study has shown, reduced patient days of stay and readmissions. This study showed that the post op day number was higher in the group that did not have the preoperative education.

Limitations

A limitation of this study is the lack of generalizability due to a small sample size. This study was limited to a single hospital and could benefit from adding multiple facilities. The single hospital limited not only the number of patients, but also the referring physicians and the ostomy nurse. Only one ostomy nurse was staffed and available at the facility utilized. Increasing the number of patients and number of ostomy nurses to the sample population could offer a larger view of the diversity of the patient population and reduce bias from the single ostomy nurse. This bias may be related to personal education strategies, therefore, multiple ostomy nurses could offer a larger variety of teaching strategies.

It is also possible that use of a single ostomy nurse, where all patients were guaranteed to see the same nurse both preoperatively and postoperatively, could have lead to reduced anxiety due to familiarity rather than the education.

Another limitation to the study includes the level of critical care between the groups. Many of the patients in CG did not receive early preoperative education due the emergent need

of surgery and the critical state of the patient. This critical state could induce a higher level of anxiety in the CG patients.

Implication for Nursing Practice

It is well recognized that education plays a critical role in the success of patients reaching their goals and outcomes. Reducing anxiety during key educational sessions is key to long term success, retention of knowledge and patient acceptance. Nurses play key roles in patient education in all areas of nursing. Ostomy patients are a special population with very personal needs. Nursing has a clear role in identifying and addressing these needs during time of care. Early contact and education with patients prior to stressful circumstances can contribute to better relationships and patient quality of life following ostomy surgery.

Nurses should be made available to meet patients at the bedside or in an outpatient setting prior to ostomy surgery to incorporate education regarding the creation of the ostomy and stoma, care and management of the stoma, how to obtain supplies and discuss any fears and feelings the patient may be experiencing. Opportunity to address these fears and feelings can greatly impact the level of anxiety the patient may be experiencing.

Collaboration between nurses and surgeons to ensure adequate patient referral prior to ostomy surgery is key to the success of the patient. Nurses should seek to develop relationships with surgical staff and educate surgical staff in the services offered by ostomy nurses. A vision of the Wound, Ostomy and Continence nursing society is to recognize this specialty nurse as a leader in the field to help in improved patient outcomes (WOCN Society, 2019).

Recommendations for Further Research

This study looked at two groups of ostomy patients consisting of 15 patients per group. This study showed a significantly lower score in the patients of the IG. A recommendation is a repeat study to include a larger population over multiple facilities. A study that incorporated a much larger population with more defined demographics could assist to determine if extraneous variables played a role in the outcome, such as critical versus non critical patients, or the use of a single ostomy nurse creating bias.

A recommended study of a larger population with both groups consisting of like surgeries and stoma types, same level of care and multiple ostomy nurses is recommended by this researcher. A follow up study could consist of all patients referred for ostomy stoma marking, with only one group also receiving the early ostomy education.

Conclusion

Offering pre-operative ostomy education in addition to routine pre-operative education reduces anxiety levels in patients undergoing surgery for ostomy significantly lower than participants who did not receive the pre-operative ostomy education with a significance level of .000. This finding is in line with the Enhanced Recovery After Surgery (ERAS) theory, in which it has been stated that the more detailed the information offered to patients prior to surgery the more diminished the fear and anxiety following the surgery which may interfere with recovery and discharge (Gustafsson et al., 2013).

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Appendix A

Pre-Survey Demographic Information

- Was pre-surgical OSTOMY education given?
 - Yes=1
 - No=2

- Gender
 - Male=1
 - Female=2
 - Transgender=3

- Age _____

- Post op day # _____

- Type of stoma created _____

Appendix B

Hospital Anxiety and Depression Scale (HADS)



Name: _____ Date: _____

FOLD HERE

Clinicians are aware that emotions play an important part in most illnesses. If your clinician knows about these feelings he or she will be able to help you more.

This questionnaire is designed to help your clinician to know how you feel. Read each item below and **underline the reply** which comes closest to how you have been feeling in the past week. Ignore the numbers printed at the edge of the questionnaire.

Don't take too long over your replies, your immediate reaction to each item will probably be more accurate than a long, thought-out response.

FOLD HERE

	A	D			A	D
			I feel tense or 'wound up'	I feel as if I am slowed down		
	3		Most of the time	Nearly all the time	3	
	2		A lot of the time	Very often	2	
	1		From time to time, occasionally	Sometimes	1	
	0		Not at all	Not at all	0	
	0		I still enjoy the things I used to enjoy	I get a sort of frightened feeling like 'butterflies' in the stomach	0	
		1	Definitely as much	Not at all		1
		2	Not quite so much	Occasionally		2
		3	Only a little	Quite often		3
			Hardly at all	Very often		
	3		I get a sort of frightened feeling as if something awful is about to happen	I have lost interest in my appearance	3	
	2		Very definitely and quite badly	Definitely	2	
	1		Yes, but not too badly	I don't take as much care as I should	1	
	0		A little, but it doesn't worry me	I may not take quite as much care	0	
			Not at all	I take just as much care as ever		
	0		I can laugh and see the funny side of things	I feel restless as if I have to be on the move	3	
		1	As much as I always could	Very much indeed		1
		2	Not quite so much now	Quite a lot		2
		3	Definitely not so much now	Not very much		3
			Not at all	Not at all		
	3		Worrying thoughts go through my mind	I look forward with enjoyment to things	3	
	2		A great deal of the time	As much as I ever did	2	
	1		A lot of the time	Rather less than I used to	1	
	0		Not too often	Definitely less than I used to	0	
			Very little	Hardly at all		
	3		I feel cheerful	I get sudden feelings of panic	3	
	2		Never	Very often indeed	2	
	1		Not often	Quite often	1	
	0		Sometimes	Not very often	0	
			Most of the time	Not at all		
	0		I can sit at ease and feel relaxed	I can enjoy a good book or radio or television programme	0	
		1	Definitely	Often		1
		2	Usually	Sometimes		2
		3	Not often	Not often		3
			Not at all	Very seldom		

Now check that you have answered all the questions

TOTAL

A	D

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