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The Management and Outcomes of Stoma Care with Impaired Integrity: A Case Study

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Abstract

Background: Colostomy globally affects not only physical but also psychological aspects in patients, and has been done for various reasons such as cancers of the colon and rectum. Tissue integrity disorders, irritations, and pain come up and require close service to care by nursing interventions and education for these conditions, especially in old patients.
Purpose: The goal of this study was to evaluate the management and outcomes of stoma care in patients after colostomy surgery who were seen with tissue integrity disorders.
Methods: The case-study approach was implemented into two male patients aged 76 and 80 years who were diagnosed with proximal rectal cancer and were given double-barreled colostomy treatment at Vila Alpina Hospital in São Paulo. Nursing intervention was on stoma care during cleaning and monitoring stoma characteristics as well as educating patients and their families on stoma care. Data were collected and analyzed over 3 days, while evaluation of outcome was done at tissue integrity and pain levels.
Results: After the intervention of 3 days, partial improvement in tissue integrity was observed. The physical condition of both patients with normal tissue perfusion, absence of infection signs or bleeding, and partial developmental progress was seen in stoma wound healing. In addition, pain reduction was observed from a level of 4 to 2. However, healing was not fully achieved within the study period because of its short observation time**.**
Conclusion: Nursing care considering observation, education, and therapeutic interventions will have improved outcomes of stoma and will also alleviate pain in colostomy patients. Further interventions of care and education to the patient will follow up these conditions for a long time**.**

Keywords: colostomy care, nursing interventions, tissue integrity disorders, stoma management

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Introduction

Colostomy is the surgical formation of a soft tissue (stoma) in the colon; the stoma may serve as a permanent or temporary diversion. A colostomy is one of the options for surgery that may cause complexity and change one's self-concept(Whitehead & Cataldo, 2017). In the presence of carcinoma of the rectum and colon, a colostomy is most commonly performed, with approximately 150,000 cases of colon and rectal cancer in the United States per year (Vogel et al., 2022). The lifetime risk of developing CRC in the United States is approximately 4.3%, with 90% of cases occurring after the age of 50 years (Kaltenbach et al., 2020). The highest rates of stoma implantation can also be seen in countries where there are high incidences of colorectal cancers and other gastrointestinal disorders (Akiko Kimura, 2014). For instance, in Japan and South Korea, two have been identified to contribute massively to an upsurge in stoma surgeries due to colorectal cancers and conditions such as diverticulitis. It ought to be noted that Japan ranks among the highest in terms of the global rates of colorectal cancer, which is one main contributor to stoma procedures carried out. Other nations, including the United States and Brazil, are adding to the growing tally of stoma patients as a result of colorectal cancer, trauma, and diseases like Crohn's and ulcerative colitis, which lead to grave complications requiring surgical wares like colostomies and ileostomies (Everhov et al., 2022).

Keywords: colostomy care, nursing interventions, tissue integrity disorders, stoma management

Such stoma complications include but are not limited to, stoma prolapse, infection, and skin irritations. However, there may also be cases of leakage at the anastomosis site, which might occur due to weak or damaged bowel tissue (Kim & Kumar, 2006). As such, it is very important worldwide that stoma patients receive proper care and monitoring. Pre-existing skin diseases, especially psoriasis, seborrheic dermatitis, eczema, infection; allergic contact dermatitis and pyoderma gangrenosum.It is unclear whether persistent or recurrent dermatitis is caused by allergies, infection, or fecal irritation. Skin/tissue care is an important aspect of colostomy care to prevent colostomy complications. Place protection on your skin before inserting the bag. The nurse observes the skin around the stoma to detect redness or tissue damage around the stoma(Nasseh et al., 2022). Nurses play a role in intervening in colostomy patients who have problems with skin tissue integrity damage. Steps that can be taken include marking the skin for stoma placement, instructing patients/caregivers on the use of ileostomy/colostomy devices, assisting patients in stoma/ileostomy self-care, including monitoring incision/stoma healing and irrigation with 0.9% saline/NaCl, ensuring necessary wound care and providing incision wound care if needed (D'Ambrosio et al., 2022). Postoperative colostomy rehabilitation requires patients and families to learn colostomy care principles and psychomotor skills to facilitate such care. While providing information is important, nurses should also provide patients with appropriate opportunities to learn psychomotor skills related to colostomy care (Shoja et al., 2024). Patients and families need to be educated about stoma care, as due to the short duration of treatment (2-4 weeks), patients cannot be fully taught stoma care techniques before discharge (Wasserman & McGee, 2017).

In Brazil, research on colostomy care highlights the importance of specialized care for ostomy patients. A study at Hospital de Base in Brasília emphasized the quality of life challenges faced by patients with both temporary and permanent colostomies (Nieves et al., 2017). Similarly, research in Porto Alegre found that women undergoing colostomy surgery require support in managing body image and emotional well-being(Fernandes Sousa & Brito Santos, 2020). Moreover, a healthcare service in São José do Rio Preto focused on individualized care, including hygiene guidance and device use, crucial for patients' rehabilitation and quality of life. These findings underscore the need for continuous, holistic care (Jasemi et al., 2015)

Colon cancer is cancer that occurs in the large intestine. Colon cancer is the second leading cause of death in America after lung cancer. The disease is fatal because it often goes unnoticed until it reaches its most severe state (Haggar & Boushey, 2009). Surgery is the only way to reverse the cancer. It can be concluded that colon cancer is a type of cancer that attacks the colon, grows rapidly, develops, and is fatal because this disease is the second cause of death (Hossain et al., 2022). A colostomy is making a hole in the colon or dividing the colon and removing it (the last part of the last colostomy), leaving a hole in the skin of the abdomen (Marc I. Brand). Damage to mucosal tissue, cornea, skin or subcutaneous tissue (Bukowiecki et al., 2017). Associated factors: Circulatory disorders Chemical irritants, Fluid deficiency, Fluid overload, Physical barriers to mobility, Lack of knowledge, Mechanical factors (pressure, tearing, friction), Nutritional factors, Radiation, Temperature extremes(Yang et al., 2020).

Method

The research design that will be used in this study is a case study with two subjects of nursing care for a colon and colostomy patients with tissue integrity problems in the Vila Alpina Hospital in São Paulo. The length of time of the study adjusts to the target success of the action (at least 7 days during the treatment period). Assessment in this case study obtained patient data from Mr. B aged 76 years and Mr. K aged 80 years, male gender, with a medical diagnosis of Ca Rectum Proximal Posterior Aspect Post Ultra Low-anterior Resection or double barerled colostomy. The main complaint is pain in the surgical wound and stoma, pain appears when pressed or depressed due to activities such as changing positions from sleeping to sitting, pain like stabbing, not spreading with a scale of 4 (Scale 0 - Scale 10). On the abdomen, there is a post laparotomy wound covered with clean gauze, not seeping. the right side appears to have a reddish double-barreled colostomy, moist stoma, with a diameter of approximately 5 cm. The stoma protruded approximately 1 cm, there were no signs of irritation, no signs of infection and no signs of bleeding. Stoma products appear greenish liquid, the amount of stoma products is ½ colostomy bag. The assessment data is then analyzed and obtained nursing diagnoses that arise, namely tissue integrity disorders related to mechanical factors.

The patient appears to have a laparatomy wound in the abdomen that looks clean, covered with gauze and does not seep and double barreled stoma in the right abdomen is reddish, the stoma is moist, the stoma size is approximately 5 cm, the stoma protrudes approximately 1 cm, there are no signs of infection in the stoma and there are no signs of bleeding in the stoma. Stoma products appear greenish liquid, the amount of stoma products is ½ colostomy bag.The author makes a nursing plan with goals that refer to the Nursing Intervention Classification, which is expected to improve Mr. B's tissue integrity with the criteria for the results of tissue damage decreasing. Mr. B's tissue integrity is expected to improve with the result criteria of decreased tissue damage and decreased

pain for 3 x 24 hours and nursing interventions that refer to the Nursing Intervention Classification with stoma care interventions, namely monitoring stoma conditions (types, characteristics and complications), freeing the stoma area from patients, safety when caring for stomas, removing and freeing stomas from previous bags, cleaning stomas, measuring stomas, preparing new stoma bags, installing stoma bags according to size.

Results

Case Study: Stoma Care Actions in Post Colostomy Ca Rectum Patients with Stoma Tissue Integrity Disorders, education which includes explaining action procedures and pharmacological therapy collaboration. Implementation of nursing actions for nursing diagnoses of tissue integrity disorders in patients Mr. B and Mr. K with post colostomy for 3 x 24 hours. K with post colostomy for 3 x 24 hours is carried out in accordance with predetermined nursing planning and evaluation is carried out after each action and at the end of each shift. Nursing evaluation on the third day obtained the results of the problem of tissue integrity disorders partially resolved with the criteria for resolved results, namely decreased pain with a scale of 2 and tissue damage has not decreased, the patient is discharged with education to the patient and family to perform stoma care as taught by the nurse.

The patients in this case were two men aged 76 years and 80 years old or included in the elderly category. This is according to research by (Kleemann et al., 2014), that ca rectum is found more in men than women with a ratio of 19.4 and 15.5 per 100,000 population caused by hormonal factors. Estrogen hormone is a protective factor against ca rectum and estrogen hormone is higher in women than men, therefore men are more likely to get ca rectum. Age also affects the occurrence of ca rectum, by the research of (Dharwadkar et al., 2022), which states that the incidence rate of ca rectum is higher at the age of 50 years and above due to genetic changes with age. Another assessment result data is that the patient underwent ultra-low anterior resection surgery or made a double-barreled colostomy on the right abdomen. This is by the theory of Ahmad, (2014) which says that ca rectum patients perform double-barreled colostomy surgery as an effort to prevent the spread to the lymph nodes and so that cancer cells do not spread to other parts of the body. K, namely tissue integrity disorders related to mechanical factors characterized by the presence of a double-barreled colostomy on the abdomen.

This is by the Nursing Intervention Classification theory which says that tissue integrity disorders are damage to tissues, namely mucous membranes, muscles, and ligaments caused by mechanical factors with signs and symptoms of pain, bleeding, and redness so that they are by Mr. B's condition. B Mr. B and Mr. K had double-barreled colostomy surgery and experienced pain and tissue damage. The patient did not experience bleeding because the operation was performed on the 4th postoperative day so no signs of bleeding were found in the patient. The formulation of goals in nursing planning for patients in this case study refers to the Nursing Intervention Classification with nursing interventions namely stoma care which includes Observation, Therapeutic, Education, and Collaboration has referred to the Nursing Intervention Classification. This is by the theory expressed by (Demirbağ et al., n.d.), that the determination of nursing interventions includes observation, therapy, education, and collaboration. Nursing planning carried out is stoma care, this is the opinion of (Albulescu et al., 2024), which says that stoma care is an action taken to minimize complications and tissue damage due to colostomy. B and Mr. The implementation of nursing actions on Mr. B and Mr. K with tissue integrity disorders focuses on stoma care measures carried out for 3 x 24 hours which aims to reduce tissue damage and reduce pain because the patient experiences pain. Colostomy is for intestinal decompression in cases of intestinal obstruction/obstruction.

Based on the theory put forward by (Welsh, 2018), nursing interventions are defined as various treatments based on clinical judgment and knowledge carried out by a nurse to improve client outcomes, among others: Monitor stoma wound characteristics, including drainage, color, size, and odor, Assist patients in providing colostomy care, provide necessary wound care; clean with normal saline / NaCl 0.9%, Apply the right colostomy device placement for stoma, Compare and record any wound changes, Advise patients and families regarding stoma wound care procedures, Monitor stoma / surrounding tissue healing and adaptation to ostomy equipment, Advise patients and families to recognize signs and symptoms of infection, collaborate & provide antibiotics according to indications.

In this study, by the established outcome criteria, both client 1 and client 2 showed a partially resolved problem / partially achieved goal because the client showed changes in all predetermined criteria, seen from the evaluation results where: Normal tissue perfusion (reddish stoma), No signs of infection, Normal tissue thickness and texture. Shows a slight process of stoma wound healing (the skin area around the stoma is slightly reddish, and the odor is reduced). According to the researcher, the evaluation results obtained by the problem partially resolved or the objectives partially achieved are because wound healing or repair of tissue integrity damage takes a long time. Regular and continuous care is needed so that the outcome criteria can be carried out properly. However, the client's knowledge about colostomy care is better so it is hoped that at home they can do colostomy care properly so that the problem of tissue integrity damage can be resolved. According to (Nqoro et al., 2023), evaluation must occur at each step in the nursing process and the care plan that has been implemented. The effectiveness of actions and the achievement of identified outcomes must be evaluated as an assessment of the client's status.

Strengths And Limitations of The Study

The study demonstrates strengths in its comprehensive approach, integrating evidence-based practices like the Nursing Intervention Classification (NIC) to address stoma care and tissue integrity. Detailed patient assessments and clear outcome metrics, such as stoma characteristics and pain levels, highlight the effectiveness of interventions. Additionally, the patient-centered focus on education empowers patients and families for self-care. However, the study's small sample size and short observation period limit the generalizability and depth of findings, particularly regarding long-term wound healing or complications. Psychological aspects of colostomy care, though mentioned, remain underexplored, and the study's hospital-specific context may reduce applicability in settings with different resources or demographics

implications on patient care and the profession.

Every one of these findings reiterates the need for precise and detailed stoma care protocols that will assist in preventing complications and educating patients, along with their families, to promote self-care. Integrated into this overall picture is the need for collaboration of disciplines to address the diverse needs of colostomy patients. As indicated for the nursing profession in the study, there must be specialized training in stoma care in nursing education for gerontologically oriented patients and reasonable advocacy for provision. Also, future research should study the long-term outcomes and psychosocial support of colostomy patients to broaden knowledge and improve the quality of care.

Conclusion

The study thus illustrates the significance of integrated care concerning both tissue integrity and patient education in post-colostomy care. Although its findings are promising, replication using larger samples, lengthy follow-ups, and a closer focus on psychological well-being should enhance the applicability and impact of the search. This study serves as a reminder to the nursing profession concerning the need for lifelong learning, patient advocacy, and evidence-based practice to improve colostomy patient outcomes.

Author contribution

Antonio Fesarlo Carlos and Miciella Angela helped conceptualize, design, collect, and analyze data. Thus, Domenica Amelia Da Silva significantly drafted and corrected the paper. Final publication approval by Antonio Fesarlo Carlos Author-wise Contributions through Research. Throughout the research process, things have been monitored by Domenica Amelia Da Silva to see to it that any questions regarding whether the study is reliable were doubtful.

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Conflict of Interest Statement

The authors declare that they have no competing interests.

Data Availability

On a proper request, the owner of the dataset that has either developed or analysed it in the current study can be contacted directly.

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