Implementation of an Educational Program to Improve Nurses' Knowledge of Basic Ostomy Care

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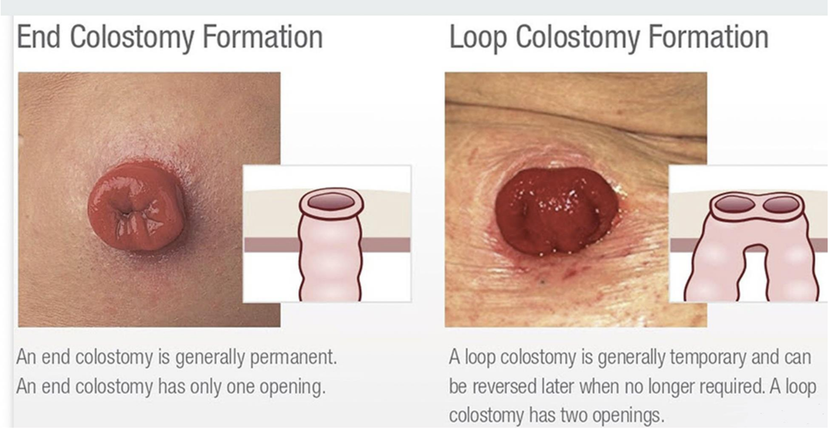
Summary

This staff education project aimed to determine if an educational program would improve nurses' knowledge of basic ostomy care in a surgical unit (3 Cohen). Findings showed that nurses in the surgical unit lacked some basic knowledge and skills needed to perform proper ostomy care. Regardless of the years of experience, nurses may lose skills over time if they do not refresh their knowledge on basic ostomy care. The PICO (population, intervention, comparison, and outcome) question for this project was as follows: *Does participation in an educational program focused on basic ostomy care improve the ostomy knowledge of staff nurses working on a surgical unit?* This project focused on educating surgical nurses on the basics of ostomy care. A PowerPoint presentation was used as a visual description of ostomy care, along with hands-on learning using ostomy appliances.

A pre-and-post-test design was used to determine the project's outcomes. Results from the pre- and posttests showed improvement in knowledge following a 45-minute educational program. Descriptive statistics showed improvement in test scores in the posttests. The Wilcoxon signed rank nonparametric test showed a significant difference between the pretest and posttest scores (*p* value < 0.05). Nurses also verbalized satisfaction with the educational program. The outcomes of this project showed the need for frequent ostomy education and refresher courses. The availability of staff education to improve knowledge among nurses has the potential to improve patients' experiences and quality of life, leading to a positive social change.



Background

The purpose of this project was to determine if the implementation of an educational program for nurses focused on basic ostomy care would improve nurses' knowledge of the care of the patient with an ostomy. The nursing staff on the surgical unit were asked to participate in this project, and ancillary staff were excluded.

An educational program was presented to the staff. A PowerPoint was created as a visual aid to augment the educational program. Sample ostomy pouches were used to demonstrate how to cut the skin barrier accurately depending on the size of the stoma. During the presentation, the participants were asked to engage in hands-on learning to familiarize participants with the ostomy appliance.

Before the start of the program, nurses were asked to complete a pretest on basic ostomy knowledge. After the program's completion, the nurses were asked to complete an identical posttest. The total time for completion of the pre- and posttest and the educational session was approximately 45 minutes in duration. The hospital's ostomy care protocol was reviewed and used as a guide during this project implementation.

Continuation of education is crucial in healthcare to promote relevant learning and relearning of proper procedure guidelines with supporting evidence. Based on the Johns Hopkins Evidence Appraisal Tool, all studies used were Level III. Most of the evidence found was cross-sectional studies and high-quality literature reviews. Evidence showed positive outcomes for nurses who attend educational programs on ostomy care in other articles and project implementations.

SCAN FOR OSTOMY PPT

SCAN FOR CAPSTONE PROJECT

Review of Literature

Among nursing professionals, a gap in knowledge regarding ostomy care has been identified in the literature (Belay et al., 2023; Duruk & Uçar, 2013). Educational training on ostomy care can improve nurses' confidence and knowledge; however, competence may decline if there is a lack of frequent exposure to stoma care (Naseh et al., 2023). The literature demonstrates that **regardless of years of experience, nursing staff should continue their education to improve clinical skills.**

In-service training is necessary to enhance the knowledge of ostomy care by nurses (Belay et al., 2023). A qualitative study reported that nurses with more experience in providing hospital care to patients with an ostomy, those with higher levels of education, as well as those nurses with more knowledge of ostomy care, provided better ostomy care to patients (Cross et al., 2014).

On the other hand, nurses' limited competence in the accurate placement of ostomy appliances, time limitations in terms of nursing care, and heavy workloads can impair the quality of ostomy nursing care (Shoja et al., 2024). In a study of surgical nurses, participation in the training of ostomy care, having more than 8 years of nursing experience, attending educational meetings focused on ostomies, and reading professional literature were significant factors associated with improved knowledge of ostomy care (Belay et al., 2023).

A lack of adequate ostomy education during undergraduate nursing programs has also been reported in the literature. Zimnicki and Pieper (2018), in a study of undergraduate nursing students' perceptions of ostomy education, found that in addition to limited education, no clinical exposure to ostomy patients and a lack of knowledge of basic ostomy care was reported. Nurses spend most of their time in direct contact with patients; therefore, they need the skills to better identify patients' physical, mental, and social needs to provide them with proper ostomy care (Shoja et al., 2024).

In this project's setting, new graduate nurses are provided with a basic ostomy lecture aimed at providing basic ostomy care during residency. While new graduate nurses in the residency programs at this hospital receive ostomy care education, nurses on the unit rely on past knowledge of ostomy care. All acute care nurses should have the basic competence to provide postoperative care and educational support to new ostomy patients. This should include information on proper stoma assessment, proper appliance system fitting, emptying and changing pouches, access to supplies, and basic stoma-related problem-solving skills (Alenezi et al., 2022). These methods were taken into consideration when designing the components of the project interventions.

Results

Descriptive statistics were used to analyze all study variables. Scores on the pre-/posttest were recorded as a percentage. Frequency distributions, mean, standard deviation, and percentage were calculated based on the type of variable (continuous or categorical). The percentage change between the pre- and posttest scores, mean, and averages were calculated. The average pretest score was 83, and the average posttest score was 97. The median pretest score was 80, while the median posttest score was 100. This showed an approximate 12.5% median change improvement post-implementation. There were few outliers in the outcomes of this project. The higher average posttest scores suggest overall improvement in outcomes.

A *t* test or nonparametric equivalent was conducted to determine if there were any differences between the pre- and posttest scores. Both the results of the *t* test (*t*-statistic: -7.65) and the Wilcoxon test indicate statistically significant differences between the pretest and posttest scores (*p* value < 0.05). This shows that the intervention had a significant positive impact on performance, improving scores in comparison.

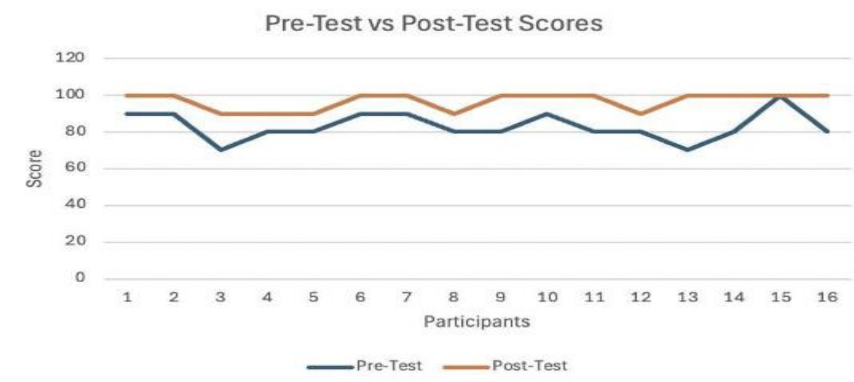
Table 1

Percentage Change (Pre to Posttest Results)

Participants	Pretest score	Posttest score	Change (post–pre)	% change
1	90	100	10	11.11%
2	90	100	10	11.11%
3	70	90	20	29%
4	80	90	10	12.50%
5	80	90	10	12.50%
6	90	100	10	11.11%
7	90	100	10	11.11%
8	80	90	10	12.50%
9	80	100	20	25%
10	90	100	10	11.11%
11	80	100	20	25%
12	80	90	10	18.75%
13	70	100	30	42.85%
14	80	100	20	25%
15	100	100	0	0%
16	80	100	20	25%

Figure 1

Comparison of Pre and Posttest Scores



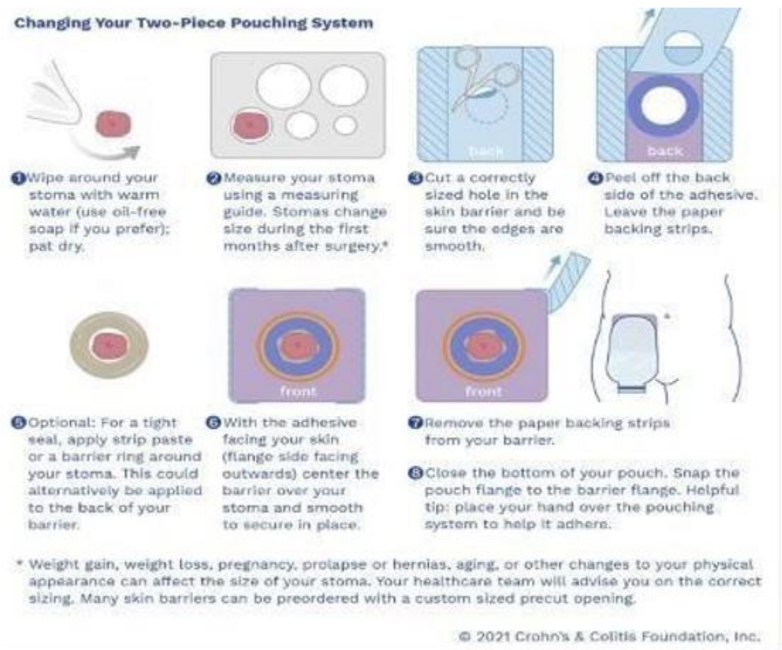
Discussion & Recommendations

The project can be expanded to other units that have patients with ostomies. This knowledge may prevent complications (e.g., infection, ileus, protrusion of stoma). The prepared nurse can better educate patients to perform self-ostomy care and address patient comfort with self-care, helping to lessen differences in day-to-day life activities.

Nurses showed a willingness to participate and learn. There were no identified negative outcomes from this project, ruling out any threats to the organization. This project motivated leadership to identify the need for implementing educational in-services for nurses to frequently refresh their knowledge on ostomy care as well as other surgical unit interventions. The stakeholders identified that providing nurses with educational in-services clearly show an improvement in nursing knowledge.

Limitations:
- Time constraints
- Non-funded project/nurses' willingness to attend off shift
- Availability of nurses/size of group

Future Recommendations:
- Expansion to other units of the hospital
- Re-testing participating staff within a few months to test the retention of knowledge
- Creating mandatory continuing education sessions on ostomy care
- Educational in-services for ancillary staff on how to empty/ ostomy bags & identify possible complications that may be communicated to the nurses



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