

## Establishment of a stoma care training program for nurses in Sri Lanka and evaluation of its effectiveness

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**Key words:** Stoma care nurse; training; developing country; effectiveness

### Abstract

### Introduction

In June 2012, the Ministry of Health with the Department of Surgery of the Faculty of Medicine, University of Colombo conducted the first certificate course in stoma therapy for nurses in Sri Lanka.

We aim to evaluate the success of the course in enhancing the knowledge and skills of the participants.

### Methods

We evaluated 15 domains of patient care in the 61 participants using a self-administered validated questionnaire administered before the onset and after completion of the course. Data were analysed using Wilcoxon signed-rank test.

### Results

Of the 61, 37 (60.6%) were females. The mean age was 31.5 (SD±5.5) years. All 15 domains of patient care had improved at the end of the program. The biggest increase was seen in staff confidence category. The 3 domains that had the biggest improvement were; confidence to select different appliances to suit different conditions (90% improvement in score), having material for proper patient teaching (88.6%) and confidence in educating patients (77.6%). There were no statistically significant correlation between age, gender or years in nursing and the improvement in any of the measured domains.

### Conclusion

The program was successful in allowing the participants to function independently. It was conducted with local resource personnel and minimal cost.

### Introduction

Sri Lanka with a population of nearly 21 million [1] is one of the few developing countries in the world which still maintains a government sponsored free health care service. The health services expenditure was 2.9% of the GDP in 2010 [1] which is comparable with other countries in the region like India, Bangladesh and Singapore. There are approximately 60,000 beds for inpatient care (3 per 1000 persons) and 19,000 nurses in the free health service in Sri Lanka [2]. Though the traditional role of the in-ward nurse has largely persisted in Sri Lanka, the new trend towards specialized nurses is slowly emerging.

Stoma care is a specialized area in nursing, and a trained stoma care nurse is an important member in the colorectal surgical team [3-5]. Their role in patient rehabilitation is multi fold; from pre-operative services to post-operative and community care [6-8]. The National Health Service (NHS) in the United Kingdom has identified the importance of the involvement of nurses in the management of patients with colorectal cancer and has made several recommendations about their role in the diagnosis, treatment and support of patients [9]. In Sri Lanka there were only 3 trained stoma care nurses available in the state health care service. There were 447 documented cases of patients with ano-rectal cancer referred to the National Cancer Institute in 2005 [10]. In addition the prevalence of Inflammatory Bowel Disease such as ulcerative colitis and Crohn's disease which may need ostomies are also increasing in Sri Lanka (incidence 5.3/100,000 and 1.2/100,000 respectively [11]). Hence, the need for specialized stoma

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therapy nurses was promptly identified by the Ministry of Health. The authors were invited to plan and supervise the training program. The aim was to provide at least one trained stoma care nurse to each teaching and general hospital.

## Material and methods

### Outline of the course

The course was designed to cover the important aspects of stomas created in the gastro intestinal and genito urinary systems. Tracheostomy was not included in the course due to the different management strategies involved. It was designed as a 4 week full time certificate course. Key competencies recognized by previous authors [12] including stoma assessment, pouch fitting, pouch emptying, access to resources and supplies, and basic problem-solving skills as well as other content considered necessary by the local resource personnel were included in the curriculum.

The course involved lectures and discussions by the experts in the respective fields in the country. The anatomical and physiological aspects, disease processes, medical and surgical management and clinical decision making components were taught by clinicians. The nursing component was taught by the second author. Formal teaching-learning activities included lectures, discussions, ward visits and clinic duties. In addition, the participants were asked to select a stoma patient and follow them up for the duration of the course. They were instructed to identify health and non-health problems of the patient and potential interventions were suggested. The end of course assessment included a report and a case presentation by each group. A panel of experts reviewed their reports and gave a feedback on changes and improvements.

The entire program, except interaction with patients, was conducted in English.

Ethical clearance for the study was obtained from the Ethics Review Committee of the National Hospital of Sri Lanka (NHSL).

### Participation

The participants were selected from teaching and general hospitals from the entire country. From nearly 300 applicants, 61 participants were selected. They

were subsequently grouped into groups of 10 for ward and clinic rotations. The feedback received indicated that participants engaged actively in the teaching-learning activities.

After 6 months, the trainees participated in a 1-day sequel in which their knowledge, skills and patient records were assessed. They also presented short case scenarios of their patients with management dilemmas which were then discussed by the content experts.

### Analysis of effectiveness

Participants completed a validated questionnaire [13] which evaluated basic demographic details and some aspects of patient care (staff confidence, staff resources and patient preparedness for discharge). The questions were derived from the "Survey of Ostomy Care questionnaire" which was a self-administered questionnaire used in a previous publication by Gemmil et al [13]. It contained a 15-item Likert scale (1-Strongly disagree, 5-Strongly agree) addressing confidence of the staff nurse and attitudes about the ability to care for patients with an ostomy. The questionnaire was administered on the first day of the program and at the completion. All surveys were anonymous and did not include identifying information. Continuous data were analysed using the mean, median and standard deviation. Repeated measure data were analysed using the Wilcoxon Signed Rank test. Correlations were identified using the Spearman correlation.

## Results

Of the total 61 participants, 37 (60.6%) were females. The mean age was 34.5 ( $\pm 5.5$ ) years. The mean years in nursing profession was 9.5 ( $\pm 5.5$ ) years. All 15 domains of patient care that were measured had improved at the end of the program (Table 1). The biggest increase was seen in staff confidence category (average increase in score 63.5%) followed by staff resource (55.1%) and patient preparedness for discharge (43.8%). The 5 domains that had the biggest improvement in descending order are; the confidence to select different appliances to suit different conditions ( $P < 0.0001$ ), having material for proper patient teaching ( $P < 0.001$ ), confidence in educating patients ( $P < 0.001$ ), confidence in having adequate knowledge ( $P < 0.001$ ) and confidence in assessing the stoma ( $P < 0.001$ ).

There were no statistically significant correlation between age, gender or years in nursing and the improvement in any of the measured domains.

|  | Score before participation | Score after participation | Improvement (%) | Significance |
|--|----------------------------|---------------------------|-----------------|--------------|
| <b>Staff confidence</b>  |                            |                           |                 |              |
| 1. I feel confident that I can assess my patient's ostomy well enough to care for my patient with an ostomy at this time.  | 2.8                        | 4.57                      | 63.2            | <0.005       |
| 2. I feel confident that I have the skills to size, fit, and apply an ostomy appliance at this time.   | 3.1                        | 4.69                      | 51.2            | <0.005       |
| 3. I feel confident that I can advise my patients on community resources for supplies, education, and support well enough at this time.  | 2.5                        | 4.44                      | 77.6            | <0.005       |
| 4. I feel confident that I have the background, knowledge, and experience in ostomy care to sufficiently care for my patients at this time.  | 2.7                        | 4.41                      | 63.3            | <0.005       |
| 5. I feel confident that I can teach my patients well enough to care for themselves at home at this time.  | 3                          | 4.57                      | 52.3            | <0.005       |
| 6. I feel confident that I know enough about the different types of appliances for the various ostomies and patients' conditions to adequately select the proper ones for my patient at this time. | 2.33                       | 4.43                      | 90.1            | <0.005       |
| 7. I care for ostomy patients often enough to keep up my skills in ostomy care.  | 2.95                       | 4.34                      | 47.1            | <0.005       |
| <b>Staff resources</b>   |                            |                           |                 |              |
| 8. I know who to call for answers about ostomy care should I encounter a problem.  | 2.67                       | 4.25                      | 59.1            | <0.005       |
| 9. I have the proper patient teaching materials (booklets, pamphlets, videos, etc.) to teach my patients/family about ostomy care.   | 1.93                       | 3.64                      | 88.6            | <0.005       |
| 10. If I am unsure about any aspect of ostomy care, there is someone available who can answer my questions.  | 3.03                       | 4.02                      | 32.6            | <0.005       |
| 11. I have enough time during my shift to teach ostomy care to my patient/family.  | 2.66                       | 3.52                      | 32.3            | <0.005       |
| 12. There is adequate staff education or in-service opportunities to keep my knowledge up-to-date on ostomy care.  | 2.33                       | 3.79                      | 62.6            | <0.005       |
| <b>Patient preparedness for discharge</b>  |                            |                           |                 |              |
| 13. Patients are well informed about what to expect regarding their condition, expected changes, and care at home at the time they leave the hospital.   | 2.8                        | 4.1                       | 46.4            | <0.005       |
| 14. I feel that patients will get adequate follow-up care and teaching after they leave the hospital.  | 2.89                       | 3.98                      | 37.7            | <0.005       |
| 15. Patients are well prepared to care for themselves at home at the time they leave the hospital.   | 2.79                       | 4.11                      | 47.3            | <0.005       |

Table 1. Improvements in different domains

## Discussion

Stoma care nurses fulfil a variety of needs in patients with stomas; from pre-operative services such as counselling regarding the surgical procedure, the impact of an ostomy, ostomy management, sexual counselling and stoma site selection to postoperative services such as advising the family in ostomy care, diet, provide long-term follow-up and on-going counselling, education, surveillance for complications and community care [6]. Thus, their knowledge and skills directly affect the care and education of the patients [13] and patient satisfaction [14,15]. Nurses who perceive themselves to have high competence and a favourable perception of the ostomy patient were found to have had significantly more education [15]. Given the diversity of these requirements, their training and approach also need to be similarly comprehensive. Even in well-established colorectal health care services, there are deficiencies in nursing care [16]. Clayton et al [17] have also identified that patients whose surgery resulted in stomas are also less satisfied with health care delivery.

Our initial assessment as well as the follow-up 1-day course revealed that the course was successful in delivering the necessary knowledge and skills for them to function independently. Knowles et al described a similar educational program in Scotland which achieved a significant improvement in disease-related knowledge, best practice statements for nursing issues and general issues and including attitudes that were maintained at four months [18]. They observed that the program achieved an increased index of achievement in almost all the areas concerned. A program conducted in the USA has also reported an improvement in the quality of care as the competency increased [17].

Cost effectiveness is a very important criterion in the assessment of the success of a training program. Even in Europe, Foubert et al [19] reported that cost and the need for frequent modifications of skills and knowledge are the principle limitations. Our program utilized local resource personnel and existing facilities and as a result required very little additional funding. We also noted that the improvement observed did not depend on the age, gender or the experience, indicating that this program is equally effective for a wide range of participants.

In summary, our results suggest that a 4 week course provides adequate knowledge and confidence for trained nurses to function as stoma care nurses. The staff confidence domain having the biggest increase indicates that the program was successful in making them confident in managing stoma patients and functioning independently when required. Seeing an increase in all measured domains indicates that the program was successful in providing a comprehensive training and a holistic approach for the participants. A major factor affecting stoma care nurses in the west is the infrequency of interaction with patients with stoma and that their confidence is greatly influenced by an opportunity to practice the skills learned [13]. The 6 month post-workshop review proved that our participants were actively involved in stoma care patient management on a daily basis and therefore this is less likely to be a concern in our system.

Another important component of the course was training the participants in patient education. Nurses are generally trained to care for the patient than carry out patient education [13]. Training nurses in how to educate patients during their regular shift recognizes the important role of patient education in patient retention of information. Teaching nurses how to teach also enhances nurses' confidence in their ability to teach.

## Conclusions

We conclude that a 4 week full time program for trained nurses would suffice to impart the necessary knowledge and skills for a stoma therapy nurse. The entire program was carried out with the help of local resource persons with minimal cost. There was no statistically significant correlation between age, gender or years in nursing and the improvement in any of the measured domains.

The findings would encourage health care providers from other developing countries to explore the possibility of training stoma care nurses.

## Authors' contributions

DPW, AMPS, AT and DNS were involved in the study conception and design. DPW, SS and CS did the data acquisition, analysis and interpretation of data. DPW, SS, CS and DNS drafted the manuscript. All authors were involved in critical revisions of the manuscript.

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