

Enhancing Stoma Care Expertise: Video-Based Training for Nurses in a Malaysian Private Hospital

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ABSTRACT

OBJECTIVE: This study investigated the impact of video-based training on the skills and confidence of registered nurses in performing stoma care at a private Specialist Hospital in Johor Bharu, Malaysia.

METHODOLOGY: This study employed a quasi-experimental pre-and post-test design. A total of 109 registered nurses from three wards—General, Medical, and Surgical—participated and were recruited through convenience sampling. The intervention included a video-assisted educational program to enhance stoma care skills and confidence. Confidence levels were measured pre- and post-intervention using the Confidence Scale (C-Scale), a self-administered questionnaire, while skills were evaluated via a competency checklist through simulated procedures. Data analysis was conducted using paired t-tests to assess the effectiveness of the intervention, demonstrating its impact on stoma care competency and nurse confidence.

RESULTS: Pre-test results indicated that 97.2% of nurses had low confidence in stoma care, while post-test results showed a significant increase, with 100% of participants reporting high confidence. Similarly, skills performance improved significantly after the training. Both confidence and skill performance scores demonstrated marked improvements, with p-values <0.001, confirming the program's effectiveness.

CONCLUSION: The video-based training effectively enhances the confidence and skills of registered nurses, specifically in stoma care, highlighting the value of integrating similar training methods into programs. Implementing video-based training for stoma care provides a scalable, cost-effective approach to continuous professional development in this specialised area, directly supporting enhancing care quality and safety for stoma patients.

KEYWORDS: Video-Based Training, Confidence, Skills Performance, Stoma Care, Registered Nurses.

INTRODUCTION

Colorectal cancer and other gastrointestinal diseases have led to a rising number of stoma patients globally, including in Malaysia. According to the Malaysian Society of Colorectal Surgeons (MSCS), approximately 12,000 individuals in Malaysia were living with a stoma as of 2019, and the number continues to rise due to increasing cases of colorectal cancer and inflammatory bowel conditions¹. A stoma is a surgically created opening that redirects part of the bowel to the abdominal surface to allow waste elimination, and it may be temporary or permanent depending on the medical condition².

Living with a stoma significantly impacts patients' physical and psychosocial well-being. Complications such as bleeding, retraction, skin infections, hernias, and peristomal dermatitis are common and can affect over 80% of patients during their lifetime³. These complications often arise within the first six months following surgery but may continue for years⁴. Besides the physical challenges, stoma patients frequently

experience psychological issues such as depression, anxiety, and poor body image, which can reduce their overall quality of life⁵.

Given these challenges, proper stoma care is vital to maintaining patients' health and improving outcomes. Nurses play a crucial role in stoma management, yet many lack the confidence and training necessary for effective care. Studies have shown that over half of nurses feel unprepared to handle stoma care, often due to limited experience, inadequate training, or fear of making mistakes⁶. Specialized training programs are necessary to equip nurses with the required knowledge and practical skills.

One promising approach is video-assisted education, which has been shown to significantly improve caregiver knowledge and competence in stoma care. A study by Dabas et al. demonstrated a 27.5% increase in caregivers' knowledge scores following a video-based intervention⁷. While video-based teaching has been widely studied for patient education, limited research exists on its effectiveness in enhancing nurses' knowledge and skill, particularly in Asian contexts. There is also a scarcity of studies assessing the impact of such interventions in Malaysia, despite the country's high incidence of colorectal cancer. Therefore, this study aims to evaluate the effectiveness of video-based training in improving registered nurses' knowledge, skill, and confidence in

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stoma care in a private Malaysian hospital.

METHODOLOGY

Study Design

A quasi-experimental pre-test/post-test design was implemented to evaluate the impact of video-based training on nurses' confidence and skills in stoma care.

Population and Sample

A total of 109 registered nurses from the Surgical, Medical, and General Wards participated in the study. Inclusion criteria required participants to be state-registered nurses employed in these wards with at least six months of experience in the selected wards and completion of the probationary period. Nurses on extended leave or study leave were excluded from the study. No randomisation was involved in the study.

Instrument

The study employed the Confidence Scale (C-Scale) developed by Grundy (2013) to measure nurses' self-reported confidence levels. This scale includes five statements rated on a 5-point Likert scale, where 1 represents low self-confidence, and 5 represents high self-confidence. Scores range from a minimum of 5 (indicating low self-confidence) to a maximum of 25 (indicating high self-confidence), with higher scores reflecting greater confidence in stoma care. The scale's validity was confirmed through content validation, and its reliability was supported by a Cronbach's alpha of 0.70.

Competency tools were utilised to assess the stoma care skills of registered nurses at the Specialist Hospital in alignment with national clinical guidelines and educational committee standards. These tools, administered as pre-tests, post-tests, and follow-up assessments, included a competency checklist in a dichotomous format (Yes - performed; No - not performed) to evaluate specific procedural skills.

Data Analysis

Descriptive statistics and paired t-tests were conducted using SPSS to analyse the pre-and post-test results, assessing changes in both confidence and skills. Additionally, correlation analyses were performed to explore the relationship between confidence levels and skill performance.

Ethical Statement

The study received ethical approval from the KPJ Research Ethics Committee, and all participants provided written informed consent before participation. The Ethical reference number is KPJU/KPJRC.ECRIC-HS/2024/03 (00). The Ethical approval was on 21 March 2024.

RESULTS

Characteristics of Respondent

The sample is entirely female, with most participants aged 31-35 years, predominantly of Malay ethnicity, and holding a diploma in nursing. Their working experience varies, but most have 6-10 years of professional experience, suggesting a relatively experienced group in the nursing field. **Table I**

Table I: Demographic characteristics of the participants (n=109)

Characteristics	Frequency (f)	Per Cent (%)
Gender		
Male	0	0
Female	109	100%
Age		
20 – 25	24	22.0%
26 – 30	28	25.7%
31 – 35	37	33.9%
36 – 40	14	12.8%
41 – 45	4	3.7%
46 – 50	2	1.8
Race		
Malay	95	87.2
Chinese	1	.9
Indian	10	9.2
Others	3	2.8
Educational		
Diploma in Nursing	87	79.8
Diploma with specialisation training	18	16.5
Bachelor Degree	4	3.7
Working experience		
< 2 years	20	18.3
3-5 years	30	27.5
6-10 years	37	33.9
11-15 years	22	20.2

Confidence level related to stoma care

Table II indicates that only 3 participants (2.8%) reported high confidence, and only 3 (2.8%) reported high confidence. The vast majority (97.2%) reported low confidence before the intervention. This suggests that most participants initially lacked confidence in the related skills or knowledge. After the intervention, all reported having high confidence levels. No participants reported a low confidence level post-intervention. This shows a complete improvement in confidence levels after the intervention, indicating the effectiveness of the training or educational program in significantly enhancing participants' skills. There is a significant improvement in participants' confidence after the intervention, as indicated by the large increase in the mean confidence score from 12.30 to 21.93. The statistically significant p-value (< .001) supports that this improvement is meaningful and not due to random variation. The intervention had a substantial positive impact on participants' confidence levels.

Table II: Confidence level of nurses pre - and post-training

Confidence Level	High (n)	High (%)	Low (n)	Low (%)	Mean	Mean Difference	Std. Deviation	Sig. (2-tailed)
Pre-Training	3	2.8	106	97.2	12.30	2.183	1.477	< .001
Post-Training	109	100.0	0	0.0	21.93	1.238	1.113	—

Stoma care skill level**Table III: Stoma care skill pre and post-training**

Skill Level	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)	Mean	Mean Difference	SD	Sig. (2-tailed)
	Pre-Test		Post-Test					
Excellent	1	6.0	79	51.3	4.66	7.256	2.694	< .001
Average	46	29.9	30	27.5				
Poor	62	40.3	0	0.0	34.45	57.4	7.578	

The intervention led to a significant improvement in skill levels. Before the intervention, 6% of participants had excellent skills, with 40.3% falling into the poor category. After the intervention, 51.3% of participants reached an excellent skill level, while the poor category was eliminated. This indicates the intervention was highly effective in enhancing the participants' skills. The results show a substantial and statistically significant improvement in skills after the intervention, with the mean skill level increasing dramatically from pre- to post-intervention. The highly significant p-value (< .001) confirms that this change is not due to chance, demonstrating the effectiveness of the intervention in enhancing participants' skills.

Table III**Table IV: Relationship between confidence and competency**

Post-Test Total Skill Competency		Post-Test Total Confidence Score	
Post-Test Skill Competency	Pearson Correlation	.527	1
	Sig. (2-tailed)	.000	
n		109	109
Post-Test Confidence Score	Pearson Correlation	1	.527
	Sig. (2-tailed)	.000	
n		109	109

** Correlation is significant at the 0.01 level (2-tailed)

The results indicate a significant positive correlation between skill competency and confidence after the intervention. As participants' skills improve, their confidence levels also rise, and this relationship is statistically significant ($p < .001$). This suggests that increasing skill competency through training or education can positively impact confidence levels among participants. **Table IV**

DISCUSSION

This study aimed to assess the impact of video-based training on registered nurses' confidence and skill competency in stoma care at a private hospital in Johor Bahru. The demographic data showed a majority of female participants, reflecting the general

trend in the nursing profession, where women constitute the dominant workforce²⁵. Although this

gender imbalance limits the generalizability of the findings to male nurses, it aligns with existing patterns in healthcare systems globally²⁵.

Most participants were young, with an average age of 35, and a notable percentage had less than two years of working experience in stoma care. In fact, 64.2% of participants reported no direct experience in managing stomas, underscoring the need for targeted educational programs. This finding is consistent with other studies that have emphasized the importance of increasing nurses' knowledge and performance in stoma care through training interventions^{17,19,20}.

The results demonstrated that training significantly enhanced nurses' confidence in caring for patients with stomas. Prior to the intervention, 97.2% of the nurses reported low confidence. However, following the training, 100% reported high confidence. This finding aligns with previous research indicating that structured educational interventions, such as simulation and video-based training, can increase nurses' self-efficacy and confidence^{26,27}. A statistically significant positive correlation ($r = 0.527$, $p < .001$) between post-training confidence and skill competency further supports this relationship. As nurses acquired better skills, their confidence levels increased which was a dynamic that has also been noted in studies exploring the psychological impact of clinical training²⁸.

Skill performance also showed substantial improvement. The proportion of nurses with excellent skill proficiency increased from 6% to 51.3%, and the mean skill score rose from 4.66 to 34.45 ($p < .001$). These results reinforce the value of educational interventions in building clinical competence^{24,29}. Similar findings have been reported in other studies involving nurses caring for pediatric or elderly stoma patients, where structured training significantly improved skill performance^{4,18,22,26}.

Video-based training allowed participants to practice in a safe, controlled environment, which not only enhanced learning but also translated into better real-world performance. A study by Dabas et al.²⁴ similarly demonstrated the effectiveness of video teaching programs in improving colostomy management among caregivers. Furthermore, research suggests that training programs enhance nurses' professional

responsibility and attitudes, positively influencing care outcomes²⁶.

Beyond clinical skills, the training addressed psychological and quality-of-life factors that are often overlooked in stoma care. Stoma patients frequently experience depression, anxiety, and challenges with body image^{9,10,12}. Improving nurses' competence in both technical and psychosocial aspects of care is critical to better support patients during their recovery^{13,14}.

Additionally, the study supports the need for lifelong learning and continuing professional development in nursing. The rapid evolution of healthcare technologies and treatment protocols necessitates that nurses continually update their knowledge and skills [30]. This is especially true in specialized care areas such as stoma management, where patient needs can be complex and varied³¹.

Despite the positive findings, the study has several limitations. It exclusively involved female registered nurses, limiting the applicability of the findings to male nurses or mixed-gender teams. Prior literature has suggested that gender may influence clinical confidence and learning preferences, which could impact training outcomes²⁵. Furthermore, the study was conducted in a single private hospital, which may not reflect practices in public institutions or other regions with different resources and patient demographics.

Another limitation was the short-term nature of the evaluation. Confidence and skills were assessed immediately before and after the training, without follow-up to determine long-term retention. This makes it difficult to conclude whether the improvements observed were sustained over time. Additionally, the use of self-reported measures for confidence may introduce bias, as participants could overestimate or underestimate their actual abilities²⁸.

Nonetheless, this study contributes to the growing body of evidence supporting the role of structured, video-based training in improving nurses' confidence and clinical skills in stoma care. Future studies should consider larger, more diverse populations, include follow-up assessments to evaluate long-term outcomes, and incorporate objective skill assessments to complement self-reported data.

CONCLUSION

This study assessed the impact of video-based training on registered nurses' skill competency and confidence in providing stoma care. The findings revealed that nurses perceived that they lacked confidence and skill before the training, especially when they had fewer years of experience or had not had the opportunity to care for patients with ostomies. Therefore, registered nurses must improve their confidence and skill with stoma care. Nurses must have opportunities to upgrade their skills and enhance their confidence level in caring for patients with ostomies. This will help them live with stomas even

after discharge. These results emphasise the effectiveness of structured, targeted training in enhancing clinical capabilities in areas where nurses may have limited experience with stoma care. The significant positive correlation between skill proficiency and confidence suggests that as nurses acquire and refine their skills, their confidence in clinical practice improves, leading to better patient care outcomes. To build on these promising results, future training programs should aim for multi-centre study and include assessments over longer periods to evaluate skill retention. Emphasising specialised, structured training as part of ongoing professional development initiatives could further elevate patient care standards across diverse clinical settings.

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AUTHOR CONTRIBUTION

Sain NS: Conceptualisation, data collection and data analysis

Kunjukunju A: Validation of findings, wrote paper

Johari S: Validation of the methodology and results

Fariza N: Validation of the methodology and results

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