



Original Article

Discharge planning practice for patients with colorectal cancer in Thailand

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ABSTRACT

**Background & Aim:** Nurses play a vital role in discharge planning, especially for patients with colorectal cancer who require complex post-treatment care. However, there is a limited understanding of nurses' discharge planning practice in oncology settings. This study aimed to examine current discharge planning practices for patients with colorectal cancer among oncology nurses in Thailand and associated factors.

**Methods & Materials:** A cross-sectional survey study was conducted between October and November 2020. Oncology nurses involved in colorectal cancer care were recruited across Thailand via Facebook and the Line application. A convenience and snowball sample of 206 nurses completed the online survey. Descriptive statistics, t-test, and one-way ANOVA were used for data analysis.

**Results:** The discharge planning activity with the lowest mean score was related to sharing discharge planning summaries and/or care plans with other healthcare facilities ( $M = 3.00, SD = 1.32$ ), followed by providing information about returning to work ( $M = 3.06, SD = 1.28$ ), financial resources ( $M = 3.12, SD = 1.26$ ), and disease ( $M = 3.13, SD = 1.25$ ). Factors significantly associated with discharge planning practice included nursing education levels, specialty training in cancer care, and experience in colorectal cancer care.

**Conclusion:** Despite the availability of discharge planning guidelines, Thai oncology nurses did not perform the full scope of discharge planning activities required for patients with colorectal cancer. Additional strategies, resources, and support systems should be established to facilitate nurses' performance of the full scope of their discharge planning practice in oncology settings. Moreover, our results suggest the need for additional education and training in the form of enhanced curriculums and continuing education seminars addressing cancer care to advance nurses' discharge planning for patients with colorectal cancer.

Introduction

Colorectal cancer (CRC) is the third most common and the second most deadly cancer worldwide (1). Although the prevalence of CRC is highest in developed countries, it is rising in low- and middle-income countries (1), including Thailand (2). With the completion of cancer treatment (surgery, chemotherapy, and/or radiation), many patients with CRC continue to experience unique disease- or treatment-related health issues after the large intestine and/or rectum are removed (3). Furthermore,

they are often unprepared for post-treatment self-management in the home setting (3). Given these circumstances, additional research is needed to better understand discharge planning activities in order to better prepare patients with CRC for post-treatment self-management and the transition to survivorship care.

Discharge planning is implemented in hospital settings to prepare patients for self-management by providing them and their family members with the information,



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knowledge, skills, motivation, support, and resources needed to achieve an optimal level of recovery (4). Discharge planning has been demonstrated to improve patient health outcomes, reduce the length of hospital stays, and decrease unplanned readmissions (5). Nurses play a particularly vital role in developing and implementing individualized discharge planning for patients (6), especially for patients with CRC who require complex post-treatment care and care coordination (3).

Many countries have issued guidelines or policy-driven frameworks to standardize discharge planning processes. However, discharge planning components vary between countries because of differences in healthcare systems, cultural attitudes, and patient needs (7). Generally, discharge planning consists of four phases: patient assessment, plan development, plan provision, and follow-up evaluation (8). In Thailand, D-METHOD is a standard guideline for discharge planning practice that specifies seven domains of essential information that need to be conveyed to patients and/or family caregivers to prepare them for self-care. These seven domains include (1) **D**isease, (2) **M**edication, (3) **E**nvironment and economics, (4) **T**reatment, (5) **H**ealth, (6) **O**utpatient referral, and (7) **D**iet considerations (9).

The D-METHOD guideline is commonly applied in clinical settings across the nation, including oncology clinics (10-12). A previous study reported that Thai nurses performed high levels of discharge planning practice across all seven domains, suggesting that nurses followed the D-METHOD guideline and that the quality of nursing care was upheld (12). However, that study was conducted in a single provincial hospital, and no specific information regarding nurses' practice settings was reported, which limited the generalizability of the findings.

To date, little is known about nurses' level of adherence to the D-METHOD guideline for discharge planning in oncology

settings in Thailand. Thus, this study aimed to (1) describe current discharge planning practice for patients with CRC among Thai nurses and (2) determine factors associated with their practice.

## **Methods**

This cross-sectional study was conducted as part of a more extensive online survey of CRC survivorship care in Thailand. For a full description of the larger study, see Duangchan et al. (13, 14).

Under the study inclusion criteria, participants were Thai oncology nurses who worked full-time (more than 20 hours per week) and provided nursing care for adult patients with CRC. Using non-probability convenience and snowball sampling, nurses were recruited across Thailand via Facebook and the Line application. Of the 250 individuals who met the eligibility criteria and provided online informed consent, 206 completed the study questionnaire, with a completion rate of 82.4%. Based on Cochran's sample size determination method (15), the sample size of 206 participants offered a confidence level of 95%, a significance level of 0.05, and an error margin of 0.07 at a minimum.

A researcher-designed questionnaire was used to collect information for the present study. Based on the D-METHOD guideline (9) and the literature on discharge planning for cancer populations (11), we developed an 18-item survey questionnaire assessing the frequency of specific discharge planning activities for patients with CRC. The 18 items addressed the following seven domains of the D-METHOD guideline: (1) disease, (2) medication, (3) environment and economics, (4) treatment, (5) health, (6) outpatient referral, and (7) diet (9). Participants were asked to report how often they performed each activity for patients with CRC using a 5-point Likert scale (1= *never*, 2= *rarely*, 3= *sometimes*, 4= *often*, 5=

always); higher scores indicated that oncology nurses more frequently performed that specific discharge planning activity. Three registered nurses and two nursing instructors reviewed the instrument and provided feedback to maximize questionnaire comprehension, completeness, and ease of completion. Their comments were applied as minor refinements to the questionnaire. The Cronbach's alpha value for scale reliability was 0.957 in this study.

In addition, data on relevant demographic characteristics of the participants were collected. The information included age, gender, nursing education level, specialty training in cancer care, experience in CRC care, and practice setting (hospital unit, level, and region).

Data were collected for 8 weeks in October and November 2020 using Qualtrics (Qualtrics, Provo, USA), an anonymous online survey platform. The first author performed all data collection activities; no research assistant was involved in the data collection. At the end of the survey, participants were asked to share the survey link with their colleagues.

SPSS statistical software version 26 (SPSS Inc., Chicago, USA) was used to perform statistical analyses. Data cleaning and examination for normality and missing data were performed. Because data missingness for each item was less than 5% and the missing pattern was classified as missing completely at

random, no imputations were applied. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to describe participants' demographic characteristics and discharge planning practice. Moreover, a t-test (two groups) and one-way ANOVA (more than two groups) were used to examine associations between the demographic variables and discharge planning practice. A p-value of 0.05 was set as the level of significance.

The study was reviewed and approved by the University of Illinois at Chicago Institutional Review Board (Protocol #2020-1254) and was conducted in accordance with the Declaration of Helsinki. All participants provided online informed consent before completing the survey.

## Results

### *Participant characteristics*

Table 1 summarizes the participants' characteristics. Most participants were female (88.8%), were aged 30 years or older (79.3%), had a bachelor's degree (72.3%), had received specialty training related to cancer care (54.3%), and had more than 6 years of CRC care experience (56.4%). Also, most participants reported working in an inpatient unit (67%) of a tertiary hospital (78.2%), with the largest proportion working in the central region of Thailand (43.6%).

**Table 1.** Demographic characteristics of participants (n = 206)

Demographic characteristic	N (%)
<b>Age (years)</b>	
< 30	43 (20.9)
30 - 39	89 (43.2)
40 - 50	58 (28.2)
≥ 50	16 (7.7)
<b>Gender</b>	
Male	22 (10.7)
Female	182 (88.3)
Missing	2 (1.0)
<b>Nursing education level</b>	
Bachelor's degree	153 (74.3)
Master's degree or higher	52 (25.2)
Missing	1 (0.5)

<b>Specialty training in cancer care</b>	
Yes	108 (52.4)
No	95 (46.1)
Missing	3 (1.5)
<b>Experience in colorectal cancer care (years)</b>	
< 1	21 (10.2)
1 - 5	61 (29.6)
6 - 10	49 (23.8)
≥ 11	67 (32.5)
Missing	8 (3.9)
<b>Hospital region</b>	
Central	81 (39.3)
Northeastern	36 (17.5)
Southern	35 (17.0)
Northern	27 (13.1)
Eastern	20 (9.7)
Western	7 (3.4)
<b>Hospital level</b>	
Primary	4 (2.0)
Secondary	45 (21.8)
Tertiary	155 (75.2)
Missing	2 (1.0)
<b>Work unit</b>	
Inpatient	140 (68.0)
Outpatient	63(30.5)
Missing	3 (1.5)

**Discharge planning practice**

Table 2 presents the detailed participant scores for each survey item. The three discharge planning activities with the highest mean scores were providing information about the importance of follow-up visits ( $M=4.26, SD= 1.09$ ), ensuring that follow-up appointments were made, and informing patients about them ( $M= 4.17, SD= 1.19$ ), and providing information about maintaining a healthy diet ( $M= 3.98, SD= 1.13$ ). On the other

hand, the discharge planning items with the lowest mean scores included sharing discharge planning summaries with patients and/or care plans with other healthcare facilities ( $M= 3.00, SD= 1.32$ ), providing information about returning to work ( $M= 3.06, SD= 1.28$ ), financial resources ( $M= 3.12, SD= 1.26$ ), and disease ( $M= 3.13, SD = 1.25$ ). The total mean score across all items was 63.23 ( $SD= 16.70$ ; possible scores ranged from 18 to 90).

**Table 2.** Frequency of discharge planning practice (n= 206)

Discharge planning activity	n (%)			Mean	SD
	Never/Rarely	Sometimes	Often/Always		
<b>Disease/diagnosis</b>					
1. Providing general information about CRC (e.g., causes, symptoms, treatment)	86 (41.8)	44 (21.4)	76 (36.8)	3.13	1.25
<b>Medication</b>					
2. Providing information about medication, such as the medication's name, properties, administration, warnings, side effects, and contraindications	67 (32.5)	40 (19.4)	98 (47.6)	3.43	1.34
<b>Environmental and economic</b>					
3. Providing information on how to establish a proper environment at home based on the disease and health condition	61 (29.8)	58 (28.2)	87 (42.2)	3.45	1.17
4. Providing information about community resources	70 (34.0)	49 (23.8)	87 (42.2)	3.26	1.26
5. Providing information about financial resources	85 (41.2)	44 (21.4)	77 (37.4)	3.12	1.26
6. Providing information about social adjustment and interaction	69 (33.5)	48 (23.3)	89 (43.2)	3.30	1.24
7. Providing information about returning to work	81 (39.3)	55 (26.7)	70 (34.0)	3.06	1.28
8. Providing education and practice in self-care skills needed, such as wound care and ostomy care	57 (37.7)	51 (24.8)	96 (47.5)	3.48	1.27

9.	Providing information about how to self-manage physical issues or symptoms and when to seek healthcare	29 (14.1)	51 (24.8)	126 (61.2)	3.96	1.21
<b>Health</b>						
10.	Providing information about physical rehabilitation and prevention of complications	33 (16.0)	61 (29.6)	102 (54.4)	3.73	1.15
11.	Providing information about how to manage the psychological consequences of the disease	49 (23.8)	68 (33.0)	89 (43.2)	3.41	1.15
12.	Providing information about healthy behaviors such as exercise and smoking cessation	36 (17.5)	57 (27.7)	113 (54.8)	3.68	1.13
<b>Outpatient referral</b>						
13.	Providing information about the importance of follow-up visits	19 (9.8)	34 (16.5)	152 (73.9)	4.26	1.09
14.	Ensuring that follow-up appointments are made and informing patients about them	29 (14.1)	29 (14.1)	148 (71.9)	4.17	1.19
15.	Providing information about whom to contact and where to go in case of emergency	31 (15.1)	52 (25.2)	123 (59.7)	3.84	1.31
16.	Referring patients to other healthcare facilities as needed	91 (44.2)	37 (18.0)	78 (37.8)	3.12	1.28
17.	Sharing discharge planning summaries and/or care plans with other healthcare facilities	99 (48.0)	34 (16.5)	73 (35.5)	3.00	1.32
<b>Diet</b>						
18.	Providing information about a healthy diet	29 (14.1)	39 (18.9)	137 (66.5)	3.98	1.13
<b>Total</b>					63.23	16.70

### *Factors associated with discharge planning practice*

Table 3 shows the demographic variables associated with discharge planning practice. Higher levels of nursing education, completion of specialty training in cancer

care, and more years of experience in CRC care were significantly associated with greater frequency of performing discharge planning practice (all  $p$  values < .001).

**Table 3.** Bivariate variables associated with discharge planning practice (n= 206)

Demographic characteristic	n	Mean (SD)	t/F	p-value
<b>Age (years)</b>				
18 - 29	43	59.23 (13.42)	F = 1.733	.161
30 - 39	89	62.61 (17.84)		
40 - 49	58	66.10(16.76)		
≥ 50	16	67.06 (16.67)		
<b>Gender</b>				
Male	22	61.55 (18.02)	t = -.498	.619
Female	182	63.42 (16.48)		
<b>Nursing education level</b>				
Bachelor's degree	153	60.46 (16.69)	t = -4.044	.000
Master's degree or higher	52	70.88 (13.98)		
<b>Specialty training in cancer care</b>				
Yes	108	68.69 (13.63)	t = 5.44	.000
No	95	56.56 (17.56)		
<b>Experience in colorectal cancer care (years)</b>				
< 1	21	49.10 (17.81)	F = 11.784	.000
1-5	61	61.28 (14.52)		
6-10	49	65.63 (15.04)		
≥11	67	70.28 (14.27)		
<b>Hospital region</b>				
Central	81	65.72 (15.72)	F = 1.239	.292
Northeastern	36	61.78 (16.83)		
Southern	35	60.20 (19.95)		
Northern	27	66.26 (13.19)		
Eastern	20	58.75 (17.34)		
Western	7	58.29 (18.44)		
<b>Hospital level</b>				
Primary	4	55.50 (28.94)	F = .709	.494
Secondary	45	61.98 (19.09)		
Tertiary	155	64.00 (15.64)		

Work setting				
Inpatient	140	64.00 (16.73)	t = .545	.587
Outpatient	63	62.63 (16.05)		

## Discussion

This study identifies practice gaps regarding nurses' discharge planning for patients with CRC in the context of a middle-income country in the Asia Pacific region. Our findings support existing evidence that nurses' practice with respect to discharge planning is suboptimal (6), especially in care coordination and providing information about the disease, financial resources, and returning to work. Moreover, in contrast to previous research findings (12), our study results suggest that discharge planning for patients with CRC is less common than for other patient populations. This difference is likely due to the fact that patients with cancer require high levels of comprehensive nursing care and complex discharge planning. Therefore, despite the availability of the D-METHOD guideline, hospitals may need to develop targeted discharge planning guidelines and adherence systems to ensure adequate discharge planning is conducted for patients with CRC and other cancer.

We found that Thai nurses often fail to perform some activities related to care coordination. Nurses reported that their most common discharge planning activities for patients with CRC were related to follow-up care within the treatment setting; this reflects the traditional healthcare service system in Thailand in which surgeons usually set up routine post-treatment follow-up care for their patients with CRC within the treatment center (16). However, nurses often fail to share discharge planning summaries and/or care plans with other healthcare facilities. This result suggests that nurses' discharge planning activities tend to be confined to their hospitals and that coordination with other facilities is inadequate. Notably, our finding is inconsistent with existing literature that

describes nurses' various care coordination roles for patients with complex needs (17). The inconsistency may be due to the fact that Thai patients with CRC typically receive follow-up care within their treatment facility (16), and thus oncology nurses have little opportunity to coordinate care with other facilities.

Consistent with previous findings (12), our study reveals that oncology nurses often fail to provide patients with CRC information about returning to work and financial resources. One reason may be that nurses lack the knowledge or skills necessary to adequately address their patients' work-related or financial concerns (18). Also, in Thailand, patients' medical costs are covered by a universal healthcare scheme (19), so nurses may assume that patients with CRC do not need information about financial resources. However, while the country's healthcare coverage can minimize patients' medical costs, being unable to work during and after treatment often exacerbates a patient's financial toxicity. Financial toxicity has been linked to patient outcomes such as symptom burden, treatment compliance, health-related quality of life, and survival rates (20). As Chan and Gordon (21) suggest, these problems could be identified and managed using a standard tool to assess patients' financial needs across the cancer care trajectory. Such assessment would be beneficial during the discharge planning phase, as nurses could identify financial toxicity as a problem for a given patient and address the issue by providing information on available financial and employment resources.

Based on our results, Thai oncology nurses often fail to provide patients with CRC

with general information about their disease. This finding is consistent with prior research showing that information about their disease is not included in discharge planning for general postoperative patients; instead, informational priorities are often placed on other matters such as wound care, postoperative complications, pain management, medications, physical activities, nutrition, and follow-up care (22). As a possible explanation for this deficiency, nurses may assume that patients are already familiar with information about their disease because it is usually provided during the initial diagnosis and treatment phases (22). However, patients' need for information is known to differ along the cancer trajectory, and patients with cancer have been found to express the greatest need for information during the post-treatment phase (23). In particular, Lithner et al. (24) reported that postsurgical patients with CRC expressed a desire to understand their disease and what it meant to them. As reported in that study, postsurgical patients were most interested in information about CRC risk factors, tumor type, how long they had it, the surgery's results, parts of the colon or rectum removed, whether any cancer might be left in their body, the potential for cancer recurrence, and how the disease would be monitored in future. Furthermore, as patients with CRC prefer to receive such information from the surgeon who performed their operation (24), nurses may perceive that providing this information is beyond their scope of practice. However, during the discharge planning process, nurses can play an important role in identifying patients' information needs, communicating and coordinating with the rest of the healthcare team, ensuring that patients receive the information they need, and confirming that they understand it (25).

Our findings demonstrate that discharge planning practice is associated with nursing education level and specialty training in cancer care. These results are consistent with a previous study finding that nurses with

additional education and training are more systematic and logical in implementing discharge planning (26). These results could be expected because individuals with higher education and/or more training have more in-depth theoretical knowledge and skills, elevating their perceived responsibility, confidence, and ability to perform discharge planning activities. Although discharge planning is embedded in undergraduate nursing curriculums, it may not be adequately addressed because undergraduate nursing programs focus on fundamental nursing science and general clinical skills for diverse disease populations and settings (27). On the whole, these results emphasize the importance of post-graduate nursing programs and specialized training in which oncology nurses can advance their knowledge, skills, and practice in cancer care (28).

Our study also identifies a significant association between discharge planning practice and CRC care experience. Although this finding contrasts with previous studies' results (26, 29), it is reasonable to assume that oncology nurses with more experience in cancer care tend to better understand and implement nursing guidelines for enhancing cancer care, including discharge planning guidelines. Furthermore, continuing professional education can provide nurses with up-to-date knowledge, skills, and competence for all aspects of cancer care practice (27). However, it may take years of practice for nurses to accumulate the experience, knowledge, and overall competency to guide their decision-making and formulate their discharge planning process. Therefore, rather than depending solely on experience to provide discharge planning proficiency, oncology nurses should be encouraged to study at the graduate level or participate in cancer specialty training to advance their competency in providing discharge planning for patients with CRC. Additionally, orientation programs for new

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nurses should include on-site training in cancer care and discharge planning.

Our findings highlight the need for strategies to fill gaps in nurses' discharge planning practice. Because hospitals should ensure discharge planning for every patient with CRC, they should develop strategies, resources, and support systems to assist nurses in performing their full scope of discharge planning practice. For example, hospitals should create more comprehensive discharge planning documents that prompt nurses to provide adequate patient education. Additionally, incorporating such documents into electronic health record systems would allow nurses' discharge planning practice to be monitored for adherence to the D-METHOD guideline. Despite evidence that nurses recognize the importance of discharge planning for patients (6, 29), their discharge planning knowledge and skills may need to be regularly updated. To this end, continuing education or in-service training should be established (30), emphasizing adherence to the D-METHOD guideline.

In addition, a greater understanding of the factors contributing to the discharge planning practice gaps identified in our study is needed. Further research is necessary to investigate Thai nurses' knowledge, perceptions, and experiences of discharge planning for patients with CRC, as well as its barriers and facilitators. Another area calling for additional research is the quality of nurses' discharge planning practice and associated patient outcomes.

Some study limitations should be noted. Although we attempted to recruit nurses across Thailand, only those who used Facebook or the Line application were included. In addition, of 206 study participants, only a small number of nurses working in primary healthcare settings and the western region of Thailand were included, limiting the generalizability of our findings. Despite these limitations, online data

collection allowed nurse recruitment across the country and ensured participants' anonymity, encouraging them to respond honestly.

## **Conclusion**

Our study shed light on the fact that despite the availability of the D-METHOD guideline, nursing practice gaps exist in discharge planning for patients with CRC in Thailand. Specific areas of suboptimal practice included care coordination and providing patients with information about the disease, financial resources, and returning to work. Also, the study findings highlighted the importance of the post-graduate nursing program and specialized training for oncology nurses. These results reveal several opportunities for hospital and nurse leaders to establish additional strategies, resources, and support systems to facilitate nurses' performance of the full scope of their discharge planning practice in oncology settings.

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## **Conflicts of interest**

The authors declare no competing interests.

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