


Learning needs and perceived barriers and facilitators to end-of-life care: a survey of front-line nurses on acute medical wards

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ABSTRACT

Objectives Caring for dying hospitalised patients is a healthcare priority. Our objective was to understand the learning needs of front-line nurses on the general internal medicine (GIM) hospital wards, and perceived barriers to, and facilitators of, optimal end-of-life care.

Methods We developed an 85-item survey informed by the Theoretical Domains Framework and Capability–Opportunity–Motivation–Behaviour system. We included demographics and two main domains (knowledge and practice; delivering end-of-life care) with seven subsections. Nurses from four GIM wards and the nursing resource team completed this survey. We analysed and compared results overall, by Capability, Opportunity, and Motivation, and by survey domain. We considered items with median scores <4/7 barriers. We conducted an a priori subgroup analysis based on duration of practice (≤5 and >5 years).

Results Our response rate was 60.5% (144/238). 51% had been practising for >5 years; most respondents were female (93.1%). Nurses had similar scores on the knowledge (mean 76.0%; SD 11.6%) and delivering care (mean 74.5% (8.6%)) domains. Scores for items associated with Capability were higher than those associated with Opportunity (median (first, third quartiles) 78.6% (67.9%, 87.5%) vs 73.9% (66.0%, 81.8%); $p=0.04$). Nurses practising >5 years had significantly higher scores on all analyses. Barriers included engaging with families having strong emotional reactions, managing goals of care conflicts between patients and families, and staffing challenges on the ward. Additional requested resources included formal training, information binders and more staff. Opportunities for consideration include formalised on-the-job training, access to comprehensive information, including symptom management at the end of life, and debriefing sessions.

Conclusions Front-line nurses reported an interest in learning more about end-of-life care and identified important barriers that are feasible to address. These results will inform specific knowledge translation strategies to build capacity among bedside nurses to enhance end-of-life care practices for dying patients on GIM wards.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Adequate end-of-life care is a human right.
- ⇒ Globally, the majority of people die in an institution.
- ⇒ There are challenges to providing optimal end-of-life care in hospital environments.

WHAT THIS STUDY ADDS

- ⇒ Our study adds to the body of literature identifying important barriers and learning needs for providing personalised end-of-life care to dying patients in hospital (outside of the intensive care unit).

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ This study may help other healthcare organisations caring for dying patients to identify areas for improvement.

INTRODUCTION

In Canada, more than half of deaths annually occur in hospital,¹ despite a preference by most Canadians to die at home.² Globally, it is estimated that, among 36 nations representing every continent and more than 16 million deaths, 54% or more occurred in hospital.³ Therefore, compassionate end-of-life care provided by interprofessional healthcare teams is important because of the emotional toll imparted by both the matter and manner of dying.⁴ However, given the historical biomedical model of care in many hospital settings, it can be challenging to provide person-centred care at the end of life that is grounded in comfort and dignity.

Some challenges to a ‘good death’ in hospital are the unfamiliar and sometimes austere institutional settings, limited professional education about end-of-life care, inadequate symptom control, communication barriers and the ‘medicalisation of dying’.⁵ A survey of 388 bereaved family members

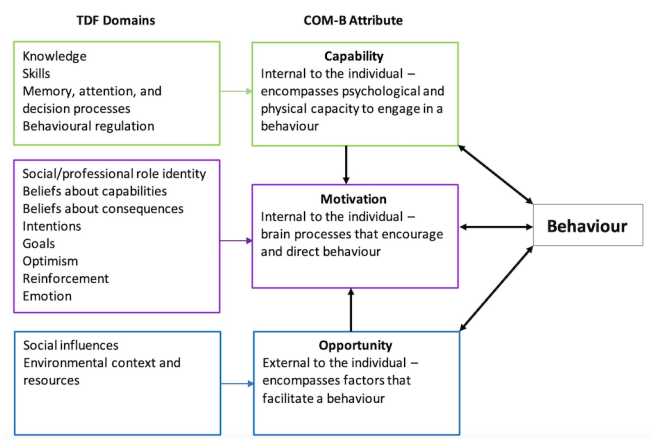


Figure 1 TDF domains linked to COM-B attribute and the interactions with behaviour. COM-B, Capability–Opportunity–Motivation–Behaviour; TDF, Theoretical Domains Framework.

reported significantly less satisfaction with end-of-life care in medical units than in extended care units, intensive care units (ICUs) or palliative care units.⁶ The dissatisfaction was focused on physician and nurse care (eg, lack of compassionate and supportive providers, lack of trust and confidence in providers), illness management (eg, management of physical and emotional symptoms like pain and depression), health services (eg, calm environment, coordinated care), and communication and decision-making (eg, end-of-life discussions and treatment plan).⁶ Factors contributing to these findings are likely multifactorial and may include limited training in end-of-life care, competing care demands, high staff turnover and limited experience caring for dying patients.^{7–10} Perceived barriers likely vary by level of training, discipline and institution.¹¹

The top three themes associated with a good death from patients, family and clinician perspectives distilled in a literature review were preferences for the dying process (eg, the how, who, where and when), a pain-free death and attending to the emotional well-being of patients.¹² One intervention that focuses on honouring and preserving the dignity of dying patients, and enhancing relationships among patients, families and the healthcare team is the 3 Wishes Programme (3WP). The 3WP was developed in the ICU at St. Joseph's Healthcare Hamilton (SJHH) to elicit and facilitate final wishes for dying patients and their loved ones. It has since transitioned from a study to an ongoing approach to practice.¹³ Building on the recent expansion of the 3WP to the general internal medicine (GIM) wards,¹⁴ our goal is to build the capacity of nursing staff to enhance end-of-life care practices in these settings through a multiphase approach; this survey to understand the current situation is the first phase. As front-line staff providing the day-to-day care of patients, the role of nurses in optimal end-of-life care is crucial and includes symptom management and support of patients and their loved ones. Our objective was to understand the learning needs of front-line nurses on the GIM wards, as

well as perceived barriers to, and facilitators of, optimal end-of-life care.

METHODS

Survey development

We used two complementary knowledge translation (KT) frameworks, the Theoretical Domains Framework (TDF)^{15 16} and the Capability–Opportunity–Motivation–Behaviour system (COM-B),¹⁷ to develop our survey. These frameworks are inter-related—the TDF distills 33 theories of behaviour change into 14 domains focused on healthcare provider behaviour.¹⁸ Each domain maps to one of Capability, Opportunity or Motivation in the COM-B system, which synthesises the critical interactions among Capability (eg, knowledge, skills), Opportunity (eg, social influences, resources) and Motivation (eg, beliefs about capabilities, intentions) for behaviour to occur. Figure 1 shows the TDF domains linked to COM-B attributes and the interactions of COM-B. In turn, the COM-B maps to the Behaviour Change Wheel¹⁷ that helps to identify appropriate interventions to change behaviours.

We used rigorous survey development and testing methods¹⁹ and followed the Checklist for Reporting Results of Internet E-Surveys to report this study.²⁰ See online supplemental appendix 1 for details on item generation and reduction, formatting, testing and administration. The survey instrument is in online supplemental appendix 2.

Our final survey instrument included 85 items across participant demographics, 2 domains (knowledge and practice, delivering end-of-life care), 7 subsections, a section on the 3WP and an open free-text section. We invited all nursing staff (registered nurse, registered practical nurse, clinical nursing externs) on the four GIM wards and from the nursing resource team (NRT) at SJHH to participate. Responses were anonymous. On completion, respondents received a CAD\$10 coffee gift card and entry into a draw for four larger prizes.

Patient and public involvement

The patients were not involved in the development of the research question, study design, recruitment or conduct of the study, however, patient and family partners have been included in the interpretation of results to ensure that the strategies we develop represent what is most important to them.

Statistical analysis

We conducted descriptive statistics using means and SD or medians and first, third quartiles (first, third) depending on data distribution. For categorical variables, we calculated counts and percentages. We conducted visual inspection and tests of normality using the Shapiro-Wilk test. We calculated response rate as the proportion of completed surveys divided by the number of eligible respondents. A survey was considered complete and suitable for analysis if the demographics and at least one other section was completed. We imputed missing data if

Table 1 Demographics and characteristics of respondents

Characteristic	Value
Unit or team, n respondents/unit or team (% of unit, % total respondents)	
1	29 (63.0, 20.1)
2	36 (56.3, 25.0)
3	27 (64.3, 18.8)
4	27 (62.8, 18.8)
5	25 (58.1, 17.4)
Sex, female, n (%)	134 (93.1)
Age, years, n (%)	
≤25	28 (19.4)
26–30	38 (26.4)
31–40	39 (27.1)
41–50	24 (16.7)
≥51	15 (10.4)
Religious/spiritual beliefs, n (%)*	
Christian†	88 (61.5)
Muslim	8 (5.6)
Hindu	1 (0.7)
None	36 (25.2)
Other‡	10 (7.0)
Professional background, n (%)	
Registered practical nurse	40 (27.8)
Registered nurse	103 (71.5)
Clinical extern	1 (0.7)
Duration of nursing practice, years, n (%)*	
<1	12 (8.3)
1–5	58 (40.3)
6–10	29 (20.1)
11–14	10 (6.9)
≥15	34 (23.6)
Formal training in end-of-life care, yes, n (%)	46 (31.9)
Type of end-of-life care training, n (%)§	
Within nursing degree/diploma training	19 (34.5)
Additional courses	12 (23.6)
Formal on-the-job training	22 (40.0)
Other¶	1 (1.8)

*Missing data (n=1).

†Christian denominations include: Catholic (n=48), other Christian (n=23), Protestant (n=16), Anglican (n=1).

‡Other includes: Agnostic (n=2), Pagan (n=2), undecided (n=2), Punjabi (n=1), Seventh-day Adventist (n=1), spiritual (n=1), prefer not to say (n=1).

§Could be more than 100% if respondents participated in more than one type.

¶Palliative care nursing lectures (simulation-based learning).

there was only one score missing per section. For overall scores, we included those respondents with no missing data (could include one imputation per section).

We aggregated Likert-type responses in three ways: (1) by individual domain, (2) overall and (3) by COM-B

attribute. By domain, we calculated sum scores, and summed items representing each of Capability, Opportunity and Motivation. For those questions with negative framing (eg, 'I feel overwhelmed when I must care for patients who are dying'), we reversed the scale during analysis to facilitate summing and item comparisons. We classified individual items with scores of <4/7 as barriers. To contextualise numeric results, we examined free-text responses. We descriptively analysed sum scores by domain and items contributing to each COM-B attribute, presenting these as proportions. Higher proportional scores indicate fewer learning needs and barriers. To compare Capability, Opportunity and Motivation scores, we used one-way analysis of variance or Kruskal-Wallis tests, depending on distribution. Using two-tailed t-tests or Wilcoxon rank sum tests (depending on distribution), we conducted subgroup analyses comparing survey scores, domain scores and COM-B scores by duration of nursing practice dichotomised as ≤5 years of practice and >5 years of practice. Alpha for all comparative analyses was 0.05. We applied Bonferroni corrections for multiple comparisons. We conducted all numeric analyses using Stata (V.14.2, StataCorp).

RESULTS

Respondents

From November to December 2021, we invited 238 nurses to complete the survey; 147 surveys were returned, however, 3 were ineligible (unit manager n=1, nursing student n=1, care coordinator n=1). Therefore, 144 surveys were eligible for analysis. The final response rate was 60.5%.

Most respondents were female (93.1%), less than 40 years of age (72.9%) and had more than 5 years of nursing experience (51.0%). Each GIM ward and NRT was proportionally represented (table 1). Table 1 reports respondent characteristics.

We first asked respondents to rate their comfort level with end-of-life care. With a median (first, third) score of 6/7 (5,6) (higher scores indicate more comfort), respondents indicated that they were moderately comfortable with their role. At the end, we asked if they would be willing to be an end-of-life care champion on their ward; 61.7% of respondents indicated they would.

Many items and overall survey scores were high, therefore, we focused on optimising barriers. Table 2 summarises raw scores by COM-B attribute, domain and overall; sample items contributing to each attribute are also shown. Proportional scores are reported below.

End-of-life care knowledge and practice

There were 141 (98.0%) respondents who completed this domain. The mean (SD) proportional score was 76.0% (11.6%). Median scores (first, third) for items associated with capability and motivation were similar (76.5% (65.3%, 87.8%) and 78.1% (70.5%, 83.1%), respectively).

Table 2 Raw scores by domain, COM-B attribute and overall

COM-B attribute		Knowledge and practice domain	Delivering end-of-life (EOL) care domain	Overall
Capability	Number of items	7	1	8
	Max score	49	7	56
	Actual score	37/49	7/7	44/56*
	Sample item	'I am comfortable providing families with information on the processes that need to occur after a patient dies.'	'Palliative care is a needs-based concept aimed at optimising quality of life for patients with life-limiting illness.'	
Opportunity	Number items	0	17	17
	Max score	N/A	119	119
	Actual score	N/A	88/119	88/119
	Sample item	'There are adequate resources for EOL care available on the unit.'	'In general, our team's communication facilitates inclusive EOL care discussions and planning.'	
Motivation	Number of items	15	12	27
	Max score	105	74	179
	Actual score	82/105	56/74	136/179
	Sample item	'I am not comfortable giving PRN medications at EOL, as it may cause the end to come sooner.'	'I find that providing EOL care is challenging, often leading me to feel fatigue and burn-out.'	
Overall max score		154	200	354
Overall actual score		117/154	149/200	266/354

*Scores for Capability items across the survey were significantly higher than scores for Opportunity items across the survey ($p=0.04$). COM-B, Capability–Opportunity–Motivation–Behaviour; N/A, not available; PRN, As needed.

Nurses reported one barrier from the Likert-type questions in this section—challenges engaging with families who have strong emotional reactions (median score 3/7 (2,5)). In addition, free-text comments underscored a need for additional training in end-of-life care, including common medication practices, how frequently to complete assessments, role clarity (eg, who can 'declare a death') and what to do once a patient has died (ie, how to prepare the body).

We also asked respondents to identify issues for which they would contact on-call physicians after-hours, and whether they hesitated to do so. The most frequently reported reason for after-hours contact of on-call physicians was for physical symptom management, followed by the need to address a change in goals of care, behavioural management and family concerns about patient status. Most respondents (62.2%) reported no hesitation in contacting on-call physicians after-hours. However, of those who did express hesitation ($n=63$, 44.1%), 73.0% ($n=46$) reported that it was because they were concerned that the physician would be annoyed and would have preferred to hear about it on rounds the next day. In addition, 61.2% ($n=39$) perceived that the on-call physician would not know the patient well enough and may not be able to assist over the phone.

Respondents reported feeling comfortable with managing symptoms, including using infusion pumps for continuous subcutaneous infusions (6/7 (4,7)). They also were comfortable knowing how to respond when

families or loved ones asked for more pain medications even when the patient was barely conscious but appeared comfortable (6/7 (4,7)), or conversely, knowing how to respond when families refused medications wanting the patient to be more awake, which would be inconsistent with effective symptom management (5/7 (3,6)). While these results suggest nursing comfort with symptom management, areas for improvement emerged in the free-text comments. For example, some nurses sought more training on identifying and managing symptoms in the last moments of life; others underscored the need for further training on common medication practices. Finally, when asked to rank six items that they would find most helpful to increase their comfort and confidence with end-of-life care, the #1 item was formalised on-the-job training for end-of-life care. The #2 ranked item was a symptom assessment and management tool.

Delivering end-of-life care

There were 119 (82.6%) respondents who completed this domain. The mean (SD) proportional score was 74.5% (8.6%). Within this domain, scores for items representing Capability, Opportunity and Motivation were similar (100% (85.7%, 100%), 73.5% (11.0%) and 74.8% (9.8%), respectively).

We identified four barriers—respondents reported being somewhat uncomfortable with managing requests for Medical Assistance in Dying (MAiD) from patients or families (mean (SD) 2.9 (1.1)). They also identified issues

such as staffing pressures and high patient acuity that made it difficult to consistently offer high-quality end-of-life care (6/7 (5,7)). Furthermore, staff reported that when they were caring for a patient at the end-of-life they tended to be given another busier patient assignment because the needs of the dying patient were perceived to be low (5/7 (3,5,6)). These barriers were also endorsed in the free-text comments.

Resources, including availability and accessibility of items such as online information and non-hospital blankets to assist in end-of-life care, were rated as neutral for both availability and accessibility (median score 4/7 (3,6)), however, the free-text comments highlighted a need for additional resources. The most helpful existing resources cited were the palliative care team, nursing colleagues, other experienced staff and the 3WP. The most requested additional resources were formal training, information binders accessible on the wards, and additional staff to care for dying patients and their families. Most respondents reported that they routinely suggested consulting palliative and spiritual care services for their dying patients (71.9% and 81.0%, respectively). Half of respondents (55.6%) reported barriers to consulting the palliative care team, including perceptions that families misunderstand the role (48.6%), the healthcare team members misunderstand the role (19.7%) and the role of the team was unclear to the respondent (4.9%). Other reported barriers were nurses hesitating to suggest a palliative care consultation, believing it was either not their role or perceptions that the GIM team thought they could manage the end-of-life care of the patient, or when families and patients appeared to fear the introduction of palliative care. Barriers to consulting the spiritual care team were indicated by 20.4% of respondents, including perceptions that the role of the team was unclear to the respondent (12.0%), followed by the ward's general practice to not consult spiritual care (4.9%). Other reported barriers included often not thinking about it, uncertainty about a patient or family receptivity to the idea and being unaware of patients' spiritual identity or preferences.

Respondents agreed that all stakeholder groups, including nursing colleagues, charge nurses, interdisciplinary colleagues, physicians, medical learners, educators, managers and hospital administrators, are supportive of end-of-life care that surpasses symptom management (eg, to include transfer to a private room if available, allowing pet visitation). When asked about the emotional impact of caring for dying patients, with a median score of 5/7 (4,6), respondents often found comfort that patients and families were well cared for.

Most respondents (83.5%) reported that having the opportunity to debrief would increase their comfort and confidence with end-of-life care (ie, score >4/7), however, only 27.0% reported participating in formal or informal debriefings within the previous year. Of those who did participate, 92.1% indicated it was informal and 23.7% indicated that formal debriefing opportunities were not offered on their wards.

Overall scores and comparisons

The maximum possible survey score from all Likert-type questions was 354. The mean (SD) proportional score for the survey was 75.2% (8.7%). Respondents had similar scores in the knowledge and delivering care domains, however, scores for items representing Capability across the survey were significantly higher than scores for Opportunity ($p=0.04$) indicating that knowledge and skills may be less of a challenge to providing optimal end-of-life care than issues such as resources, social influences and environmental stressors (table 2). The mean (SD) or median (first, third) proportional scores for items contributing to Capability, Opportunity and Motivation across the survey were 78.6% (67.9%, 87.5%), 73.5% (11.0%) and 75.6% (9.2%), respectively.

Subgroup analysis

A priori subgroup analyses revealed significant differences according to duration of practice. All scores were significantly higher for nurses with >5 years of practice experience, indicating fewer learning needs and perceived barriers compared with those nurses with ≤5 years experience.

Table 3 summarises raw scores, proportional scores and p values for each domain and COM-B attribute by duration of practice group. Figure 2 shows the distribution of scores for items contributing to capability, opportunity and motivation.

3 Wishes Project

Most respondents were aware of the 3WP (87.4%) from KT sessions including ward in-services. Most staff (71.3%) reported having been involved with this end-of-life intervention previously, either directly or indirectly (ie, witnessing their colleague's involvement). Finally, although initiating the 3WP does not require a specific consult or physician order, only 43.6% of respondents knew this; 41.4% were unsure and 15.0% indicated that a consult to the 3WP team was required.

DISCUSSION

We conducted a self-administered survey of front-line nursing staff on four GIM wards and the NRT at our hospital to understand the learning needs, perceived barriers and facilitators to providing optimal end-of-life care. We achieved a high response rate, especially in the context of the COVID-19 pandemic and staffing shortages. We identified a keen interest in end-of-life care practices. Using the theoretically driven COM-B KT framework, several areas for future consideration included discomfort with challenging situations, the need for more training and education (including clarifying team roles), practice resources and debriefing opportunities. Table 4 outlines selected barriers and our suggested optimisation strategies.

Our results indicated that, compared with self-reported Capability, Opportunity to provide optimal end-of-life care was a significant challenge. Opportunity encompasses

Table 3 Raw and proportional scores (with mean (SD) or median (first, third) by duration of practice

	≤5 years practice	>5 years practice	P value
Overall survey			
Capability	40/56; 71.4% (59.8, 83.3)	48/56; 84.8% (74.1, 93.8)	<0.001
Opportunity	87/119; 73.1% (64.7, 77.3)	93/119; 78.2% (68.9, 84.0)	0.008
Motivation	131/179; 73.3% (9.7)	139/179; 77.8% (8.2)	0.005
Total	256/354; 72.2% (8.5)	276/354; 78.0% (8.0)	<0.001
Knowledge and practice domain			
Capability	35/49; 70.4 (55.1, 83.7)	41/49; 83.7 (73.5, 93.9)	<0.001
Motivation	78/105; 73.9 (10.3)	83/105; 78.7 (10.0)	0.006
Total	111/154; 72.3 (11.6)	122/154; 79.6 (10.5)	<0.001
Delivering end-of-life care domain			
Capability	6/7; 85.7 (71.4, 100)	7/7; 100 (85.7, 100)	0.039
Opportunity	87/119; 73.1 (64.7, 77.3)	93/119; 78.2 (68.9, 84.0)	0.008
Motivation	54/74; 72.6 (10.7)	57/74; 76.9 (8.6)	0.012
Total	144/200; 72.1 (8.0)	153/200; 76.6 (8.6)	0.004
All scores are significantly higher for nurses with >5 years practice versus those with ≤5 years of practice.			

the behavioural domains, social influences and environmental context and resources, eliciting constructs such as social and group norms, role-modelling, power dynamics, environmental stressors, resources, organisational culture and a person's interaction with their environment.¹⁷ The reasons behind lower Opportunity scores are likely multifactorial and may include high rates of staff turnover and absenteeism (particularly during the COVID-19 pandemic), new staff physicians using new approaches such as different medications or routes of administration, and rotating medical staff and trainees. The free-text comments provided some insights into barriers related to environmental context including staffing pressures and high patient acuity. Resource barriers included lack of dedicated end-of-life care rooms on some units, and the need for more informational documents (eg, comprehensive nursing-focused end-of-life binders, informational resources to offer families, and a symptom assessment and management tool). Social influences cited included professional approaches (eg, concern that contacting the on-call attending physician after-hours would not be well received), and the observation that some physician practices do not involve consulting the palliative care team.

A recent study by Harasym *et al* similarly used the COM-B system to understand barriers to optimal end-of-life care in long-term care facilities through qualitative interviews with 23 physicians who visit LTC facilities in Canada.²¹ They reported barriers in each of the three attributes—Capability (lack of a standardised symptom assessment and management tool), Opportunity (lack of dedicated spaces and inadequate staff for patients nearing the end of life and limited awareness of the unique spiritual and mental health needs of residents) and Motivation (managing grief emotions).²¹ A 2017 scoping review endorsed these and other barriers from a macrolevel, mesolevel and

microlevel perspective. For example, spending time with dying patients was not prioritised in some busy clinical settings where limited resources exist, lack of education and experience were common, and clinicians were reluctant to prescribe high dose analgesia.²² Indeed, lack of time and education are supported by studies evaluating healthcare provider perceptions of end-of-life care from Hong Kong,⁷ Malaysia,⁸ Australia²³ and the USA.²⁴ Nearly all studies identified lack of formal education or training on end-of-life care, particularly for nursing staff, as a substantial barrier. Additional barriers we identified also align with other studies, including perceptions that the treating teams are self-sufficient and can provide satisfactory palliative care independently, and that patients and families may resist involvement of the palliative care team.²⁵ Despite palliative care improving outcomes for

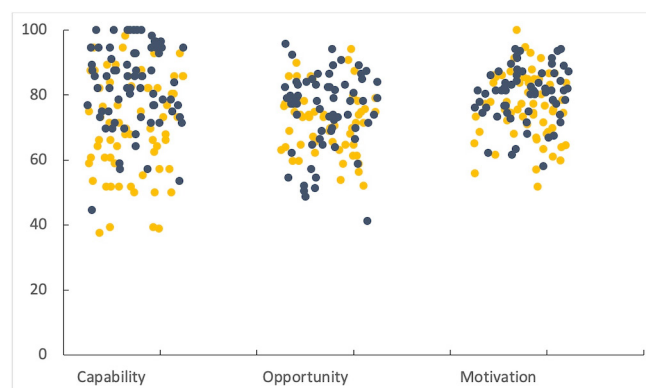


Figure 2 Distribution of respondents' median proportional scores for items contributing to Capability, Opportunity and Motivation. Yellow=scores for nurses with duration of practice ≤5 years; blue=scores for nurses with duration of practice >5 years.

Table 4 Identified barriers by COM-B attribute and TDF domain and strategies for optimisation

Barrier	TDF domain(s)	COM-B attribute	Change concept	Change idea
Organised debriefings are not offered, and informal debriefings rarely occur	Environmental context and resources; Social influences	Opportunity	Enhance opportunity	In collaboration with ward managers and educators, develop sessions that will combine education and open discussion opportunities on end-of-life care topics that are important to nursing staff (eg, palliative sedation, ethics at the end-of-life).
Lack of information resources for family	Environmental context and resources	Opportunity	Remove constraints; enhance opportunity	Work with key stakeholder groups (eg, palliative and spiritual care teams, physician group, social work, family partners) to develop a comprehensive information resource that can be tailored for families. Information could include medical team members (eg, nursing, physician, therapy staff), medications that might be used, resources for support, what to do after death, etc.
Need more education on common medication practices	Knowledge; Beliefs about consequences	Capability; Motivation	Remove constraints	Develop an accessible, easy-to-read medication resource for specific medications and how they are used in end-of-life care in collaboration with pharmacists and physicians.
Lack of understanding of team and programme roles (ie, palliative care, spiritual care, 3WP)	Knowledge; Social influences	Capability; Opportunity	Remove constraints; use visual cues	Develop an infographic highlighting services available at the end of life, including palliative and spiritual care and the 3WP. Have one version tailored towards families/loved ones and another specific for staff. Place these visual reminders in the hallways, nursing station, conference room, etc to encourage engagement from staff and patients' loved ones.
Staffing challenges	Environmental context and resources	Opportunity	Enhance opportunity; have contingency plans	Introduce a volunteer role on the wards to assist with certain activities (eg, offering the patient ice water or a comfortable blanket, help direct family to various like cafeteria, parking services) for dying patients and their loved ones.

COM-B, Capability–Opportunity–Motivation–Behaviour; TDF, Theoretical Domains Framework; 3WP, 3 Wishes Project.

individuals at the end of life, many patients who could benefit from palliative services (eg, those with complex communication needs, spiritual and cultural needs, and high stress needs²⁶), do not receive timely consultations.^{27–29} A survey of 133 healthcare professionals from a private hospital in Australia reported that nearly 40% of dying patients received palliative care ‘sometimes, rarely or never’.²³

Nurses with more experience (ie, >5 years) demonstrated higher scores across both domains and all COM-B attributes as compared with those nurses with ≤5 years of experience. The relationship between experience and views on end-of-life care has been endorsed by other studies, including by Omar Daw Hussin *et al* who surveyed 553 nurses from hospital wards in Malaysia and found that nurses with 11–20 years of experience reported more facilitators to end-of-life care than those with less experience.⁸ In contrast, a survey of 175 nurses from Hong Kong reported that years working alone was not significantly associated with perceived barriers; instead the amount of experience caring for dying patients was significantly associated with perceived barriers (ie, those with less experience perceived more barriers).⁷ Interestingly, we found that nurses with ≤5 years of experience

had the lowest Capability scores, which may be expected, but their Motivation and Opportunity scores were higher compared with nurses with >5 years of experience. Finally, among nurses with more experience, Motivation scores, while relatively lower than Capability and Opportunity, were still quite high, indicating important positive attitudes towards ensuring optimal end-of-life care.

Despite a large proportion of patients dying in hospital, end-of-life care is sometimes not a priority for providers or institutions.³⁰ However, when death is an expected outcome for seriously ill individuals and a curative approach is either not available or not desired, the focus of care needs to shift.³¹ Consensus statements from India and Australia outlined common themes that encompass a ‘good death’. They highlight the importance of communication being open, honest and patient-centred, the need to address individual preferences during the dying process, adequate symptom management and support for loved ones in the perideath period.^{32 33} The location of death within the hospital also plays an important role. For example, family ratings of care, emotional support, communication and pain control were less favourable for decedents who received ward-only care compared with ICU-only or mixed-ward and ICU care in a survey of 28 062

family members.³⁴ Higher nurse to patient ratios, higher mortality and more staff experience with end-of-life care in the ICU may help to explain these findings. Research indicates that there is still much work to be done to optimise end-of-life care practices on acute medical wards.

Our study has limitations. Quantitative studies can elicit important information; however, they often provide limited contextual information to help understand the root causes of barriers and facilitators. Another limitation of any survey is potential for response bias; we could not ascertain whether differences existed between responders and non-responders. This was a single-centre study, but our study design and results may provide useful insights for other healthcare organisations that care for dying patients to identify areas for improvement.

There are also important strengths including the focus on bedside nurses who provide crucial care for hospitalised patients. We developed our survey using established KT theories that provide a framework for to identify both barriers and potential strategies to overcome them. We engaged diverse stakeholder groups in rigorous survey instrument testing (pretesting, pilot testing and clinical sensibility testing).¹⁹ Despite the COVID-19 pandemic, we achieved a 61% response rate, which enhances the external validity of our results. Finally, the survey results allowed us to identify actionable targets for intervention.

Given the large number of patients who die in hospital, it is imperative to ensure that end-of-life care practices are optimised and prioritised to facilitate a good death for them and their surviving loved ones. Our survey sought to determine front-line nurses' learning needs regarding end-of-life care, as well as barriers to and facilitators of, optimal end-of-life care. Overall, nurses reported an interest in learning more, indicating that providing good end-of-life care to patients and families was important to them. By identifying barriers and using rigorous KT theory to develop and implement strategies, we can work to enhance end-of-life practices on our GIM wards. Future research will include prioritising interventions to implement in practice, evaluating their impact on processes of care, and patient and family units, and understanding the needs of hospital leadership to sustain effective change strategies. Our work may serve as a template or stepping-stone for other institutions caring for dying patients to identify and introduce strategies to inform clinical practice and hospital policy.

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