



Factors associated with access to palliative home care in palliative patients at Lampang Hospital

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Background: Existing literature has shown the importance of palliative home care to improve quality of life among end-stage patients. However, access to palliative home care remains an issue. This study explores factors associated with successful delivery of palliative home care in palliative patients.

Methods: A retrospective study was conducted among patients who were referred to the palliative care team for consultation at Lampang Hospital from April 2020 to March 2021. Data from electronic medical records, including successful delivery of palliative home care, age, gender, public health insurance, admission department, primary disease (cancer, non-cancer), presenting symptoms (pain, dyspnea), palliative performance scale score and morphine use, were retrieved. Multiple logistic regression analysis was applied to explore the association, adjusting for covariates.

Results: A total of 370 patients were identified, with 88 (23.8%) receiving palliative home care. Results showed that being female, having low palliative performance scale score, morphine use, and having Civil Servant Medical Benefit Scheme insurance are associated with a higher chance of having access to palliative home care, compared with their counterparts.

Conclusions: Results of this study pointed out health disparities among palliative patients who required palliative home care. This information can be in part used to redesign palliative home care system with the aim of improving access to care and patients' and caregivers' quality of life as a consequence.

Keywords: Palliative home care (PHC); health disparities; continuity of care; access to care

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Introduction

Palliative care (PC) is the end-of-life care provided for the purpose of supporting patients' medical, psychological and spiritual health (1). While the provision of PC is usually initiated at the hospitals, patients' and their caregivers' understandings about the care plan as well as relevant clinical knowledge and skills are deemed necessary to assure the quality of patient care at home.

This is as the palliative delivering system of each hospital could vary considerably. For example, a central hospital in the northern Thailand has a health professional team, including palliative physicians and nurses, which provide PC services for patients only at the hospital. After discharging the patients, health professionals, including physicians and nurses, at the primary care facilities respecting to the patients' home district will subsequently have the role to facilitate palliative services. However,

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success of the palliative service delivery at home depends on the completeness of the referral process from the hospital to the primary care. Information required during the referral includes the patient's medical information and specific cares required for each individual. Moreover, the availability of trained health professionals, essential medicines and instrument at the primary care setting, is also deemed crucial for continuous PC.

The continuity of PC system was set up as a medium to facilitate the delivery of high-quality PC seamlessly from hospital to patients' home. One important element to ascertain success of the continuity of care is the arrangement of medical professionals to visit patients' homes, called palliative home care (PHC) (2-4). PHC helps not only to reassure patients and caregivers about the provision of home care, but also explore gaps in service rendered for further assistance.

Existing literature indicated that PHC reduces the number of hospitalizations (5), unnecessary use of public health services (6,7), and financial suffering of their family (6,7). Moreover, access to PHC also prolongs patients' time spent with their families (4-8). Despite its benefits, studies show that 1.7–39.9% of end-of-life patients received PHC during the last time of life (5,6,9). The main problems attributable to absence of PHC are the lack of knowledge and understanding in medical professionals, unclear referral criteria, socio-economic problems and being elderly (10).

While some research points out the problem regarding health disparity in access to PHC, there is still no evidence showing how well PHC was successfully delivered and its associated factors in the Southeast Asian populations. The objective of this study was to explore factors associated with successful delivery of PHC among palliative patients. We present the following article in accordance with the Strengthening the Reporting of Observational studies in Epidemiology (STROBE) reporting checklist (available at <https://apm.amegroups.com/article/view/10.21037/apm-21-3161/rc>) (11).

Methods

Design and sample

A retrospective study was conducted using electronic medical records at Lampang Hospital. Information of patients, both out-patient and in-patient departments, who were referred to the PC team for consultation from April 2020 to March 2021 were collected. Patients who

died during hospitalization were excluded. In case of that patients had palliative consultation more than once, only the data from the first-time consultation were considered.

Covariates

Data including age, gender, public health insurance, department (out-patient department/in-patient department), primary disease (cancer/non-cancer), presenting symptoms (pain, dyspnea) (6,12,13), Palliative Performance Scale (PPS) score (14), morphine use (yes/no), were retrieved.

Pertaining to the mode of PHC delivery, PC teams might choose to perform it either by personal home visit or by phone (15,16). Information about successful delivery of PHC was collected using secondary data, without differentiating between the two methods.

Statistical analysis

A Chi-square test was employed to examine the association between successful delivery of PHC and covariates. Multiple logistic regression analysis, with robust standard errors, was used to explore the association, adjusting for covariates. Stata version 13 (17) was applied in the analysis.

Ethical approval

The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). This research was approved by the Ethics Committee of Lampang Hospital (No. 77/64) and individual consent for this retrospective analysis was waived.

Results

A total of 370 palliative patients were identified, as demonstrated in *Table 1*. Of 370, 190 (51.4%) were male. The patients' average age was 64 years. Seventy-seven percent of the samples had cancer as their primary diagnosis, and 60.5% were from out-patient department. The majority of samples (81.6%) were covered by the universal coverage insurance.

Concerning malignancy types, gastrointestinal cancer (24.0%), hepatobiliary cancer (22.2%), and lung cancer (21.5%) were the three most common cancer types presenting in the patients. The types of cancer in patients were displayed in *Table 2*. When comparing the differences in receiving PHC among palliative patients, results

Table 1 Demographic characteristics of the palliative patients (N=370)

Characteristics	N	%
Sex		
Male	190	51.4
Female	180	48.6
Age groups (years)		
≤40	31	8.4
41–60	79	21.4
61–80	188	50.8
>80	72	19.5
Diseases		
Cancer	288	77.8
Non-cancer	82	22.2
Department		
Out-patient cases	224	60.5
In-patient cases	146	39.5
PPS score		
10–30	112	30.3
40–60	197	53.2
70–100	61	16.5
Pain		
No	145	39.2
Yes	225	60.8
Dyspnea		
No	165	44.6
Yes	205	55.4
Morphine use		
No	64	17.3
Yes	306	82.7
Health insurance		
Universal Coverage	302	81.6
Civil Servant Medical Benefit Scheme	68	18.4

PPS, Palliative Performance Scale.

indicated that being female ($P=0.006$), PPS score ($P=0.013$) and morphine used ($P<0.001$) were related to PHC access, as can be seen in *Table 3*.

The association between access to PHC and covariates

Table 2 Types of cancer in palliative patient (N=288)

Cancer types	N	%
Gastrointestinal	69	24.0
Hepatobiliary	64	22.2
Lung	62	21.5
Gynecology	25	8.7
Breast	12	4.2
Other	56	19.4

in palliative patients were displayed in *Table 4*. As demonstrated, males were associated with increased PHC, compared with females [odds ratio (OR) 2.262, 95% confidence interval (CI): 1.337–3.824]. In comparison with patients with PPS score 70–100, those with PPS score 10–30 and 40–60 had 183.6% and 208.8% higher chances of having PHC access. Morphine used was also associated with increased access to PHC (OR 12.475, 95% CI: 3.534–44.034). Patients under the Civil Servant Medical Benefit Scheme insurance had 2.052 times higher odds of receiving PHC, compared with those under Universal Coverage insurance, with a 95% CI: 1.082–3.891.

Discussion

Results of this study showed that 23.8% of the patients received PHC, which was higher than the previously reported 1.7% and 7.5% in the Japanese and Italian study (5,9). However, another existing study demonstrated a higher prevalence of 39.9% for successful PHC delivery (6). In spite of the presence of a relatively high proportion of successful PHC delivery, it appears that more than three quarters of patients still had no access to the service. Emphasis of this existing gap in service delivery remains crucial for further quality improvement of PHC system.

Further, the study discovered that being female, having low PPS score, morphine use, and having Civil Servant Medical Benefit Scheme insurance are associated with a higher chance of receiving PHC compared with their counterparts.

Regarding PPS score, it is noticed that patients with low PPS score inclined to receive PHC in relation to their peers. This could be explained by the fact that low PPS score indicates functional deterioration of the patients, in which clinical support from health professionals may be required.

Table 3 Comparing the differences in receiving PHC among palliative patients

Variables	Total palliative patients		Palliative home care				P value
	N	%	Yes		No		
			N	%	N	%	
Total	370	100.0	88	23.8	282	76.2	
Sex							
Male	190	100.0	34	17.9	156	82.1	0.006
Female	180	100.0	54	30.0	126	70.0	
Age groups (years)							
≤40	31	100.0	4	12.9	27	87.1	0.276
41–60	79	100.0	16	20.3	63	79.7	
61–80	188	100.0	47	25.0	141	75.0	
>80	72	100.0	21	29.2	51	70.8	
Diseases							
Cancer	288	100.0	68	23.6	220	76.4	0.884
Non-cancer	82	100.0	20	24.4	62	75.6	
Department							
Out-patient cases	224	100.0	53	23.7	171	76.3	0.945
In-patient cases	146	100.0	35	24.0	111	76.0	
PPS score							
10–30	112	100.0	33	29.5	79	70.5	0.013
40–60	197	100.0	49	24.9	148	75.1	
70–100	61	100.0	6	9.8	55	90.2	
Pain							
No	145	100.0	32	22.1	113	77.9	0.534
Yes	225	100.0	56	24.9	169	75.1	
Dyspnea							
No	165	100.0	36	21.8	129	78.2	0.426
Yes	205	100.0	52	25.4	153	74.6	
Morphine use							
No	64	100.0	3	4.7	61	95.3	<0.001
Yes	306	100.0	85	27.8	221	72.2	
Health insurance scheme							
Universal Coverage	302	100.0	66	21.9	236	78.2	0.066
Civil Servant Medical Benefit Scheme	68	100.0	22	32.4	46	67.6	

PHC, palliative home care; PPS, Palliative Performance Scale.

Table 4 Factors associated palliative home care in palliative patients using multiple logistic regression analysis

Variables	Odds ratio	95% CI	
		Lower	Upper
Sex			
Male	Ref.		
Female	2.262	1.337	3.824
Age (years)			
≤40	2.590	0.791	8.473
41–60	3.083	1.041	9.129
61–80	3.370	1.036	10.964
>80	Ref.		
Diseases			
Non-cancer	Ref.		
Cancer	0.615	0.279	1.356
Department			
Out-patient cases	Ref.		
In-patient cases	0.667	0.364	1.219
PPS score			
10–30	2.836	1.089	7.383
40–60	3.088	1.087	8.770
70–100	Ref.		
Pain			
No	Ref.		
Yes	0.769	0.354	1.667
Dyspnea			
No	Ref.		
Yes	0.978	0.537	1.782
Morphine use			
No	Ref.		
Yes	12.475	3.534	44.034
Health insurance scheme			
Universal Coverage	Ref.		
Civil Servant Medical Benefit Scheme	2.052	1.082	3.891

CI, confidence interval; PPS, Palliative Performance Scale.

Results from the study also demonstrated that using morphine is highly associated with receiving PHC. This

is as morphine is the medication used when patients were presented with disturbing symptoms, such as severe pain or dyspnea (8). Hence, PC teams may consider these patients the priority for PHC in order to evaluate patients' symptoms, drug compliance, and side effects, as adjustment of the drug dosage may be indicated in some patients.

This study discovers that female patient and those having Civil Servant Medical Benefit Scheme insurance inclined to have PHC access, in relation to their counterparts. While little is known about the influence of these factors on PHC access, future studies exploring in-depth about the relationship between these factors are recommended.

It is worth noting that the data used in this study were collected during the COVID-19 pandemic. The pandemic has impacted the health system, particularly the measures to reduce personal transport and contact, and increase the use of electronic device for providing medical consultation (18,19). While this study revealed the prevalence of successful PHC delivery and its associated factors during COVID-19 pandemic, further research is recommended to explore the change in the PHC delivery after the COVID-19 era.

This research found no association between successful delivery of PHC and presence of pain or dyspnea. This implies the fact that, although the presence of disturbing symptoms is of concerns in PC, not all patients with such symptoms had access to PHC. Pertaining to this, there may be other domains relating to the symptom presentation, e.g., the level of severity, which indicate the need for PHC, especially when the resource to supply PHC is scarce. Future research, examining the association between differential severity of disturbing symptoms and PHC access, is recommended to gain a better understanding of this issue.

As noted, this study explored only the first visit of PC consultation, whereas predicting factors of receiving PHC in the latter visits of patients may be different. This leaves a research opportunity for future study to explore.

Another issue worth noting is the inability to differentiate whether patients receive PHC by staff in person or by phone. During the era of COVID-19 pandemic, recommendations for the use of various types of telemedicine have been rapidly increasing. Regarding PHC, a study has revealed no difference in the outcome of patients' care between the use of in-person and by-phone PHC (15). However, this issue may remain of concern that PHC by phone might reduce the quality of care and thus should only be used when appropriate. While factors prognosticating access to different modes of

PHC delivery may differ, this study failed to elucidate due to data unavailability. This is acknowledged as the study's limitation.

Conclusions

While some evidence unveiled the limited access to PHC among palliative patients, little is known about its associated factors among the Southeast Asian populations. This study's highlight domains associated with successful delivery of PHC, which included being female, having low PPS score, morphine use, and having Civil Servant Medical Benefit Scheme insurance. Results of the study pointed out health disparities among palliative patients who required PHC. This information can be in part used to redesign PHC system with the aim of improving access to care and patients' and caregivers' quality of life as a consequence.

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Footnote

Reporting Checklist: The authors have completed the STROBE reporting checklist. Available at <https://apm.amegroups.com/article/view/10.21037/apm-21-3161/rc>

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). This research was approved by the Ethics Committee of Lampang Hospital (No. 77/64) and individual consent for this retrospective analysis was waived.

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