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Harmonising palliative care: a national survey to evaluate the knowledge and attitude of emergency physicians towards palliative care in Kuwait

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ABSTRACT

Background and aim Although the challenges of integrating palliative care practices across care settings are real and well recognised, to date little is known about palliative care practices of emergency physicians (EPs) in Kuwait. Therefore, this study aims to explore the attitude and knowledge of EPs in providing palliative care in all general hospitals in Kuwait.

Method A cross-sectional survey was performed in the emergency rooms of all general hospitals in Kuwait using the Palliative Care Attitude and Knowledge Questionnaire.

Results Of the total number of physicians working in emergency rooms (n=156), 104 (66.67%) had completed the survey. 76.9% (n=80) of the EPs had an uncertain attitude towards palliative care. Most of the EPs (n=73, 70.28%) did not discuss the patients' need for palliative care either with the patients or with their families. Only 16 (15.4%) of the EPs responded correctly to most of the questions while nearly half of the EPs (n=51, 49%) had poor knowledge. Experience ≥11 years and better knowledge scores were independent predictors of positive attitude after adjustment of age, sex, qualifications, specialty, position and nationality (OR: 5.747 (CI 1.031 to 25.00), 1.458 (CI 1.148 to 1.851); p values: 0.021, 0.002, respectively).

Conclusions Despite recognising palliative care as an important competence, the majority of the EPs in Kuwait had uncertain attitude and poor knowledge towards palliative care. Efforts should be made to enhance physician training and provide palliative care resources to improve the quality of care given to patients visiting emergency departments.

INTRODUCTION

Emergency medicine is a specialised branch of medicine that is concerned with the stabilisation of patients with acute illness or injury for definitive care aiming at preserving life regardless of their well-being.¹ With the advancement of cancer therapy throughout the world, many patients with cancer receive therapy late in their disease trajectory which in turn leads to more visits to emergency departments (EDs).²

Patients and their families under palliative care can experience stressful moments during the disease trajectory. Consequently, the first point of access is often EDs for patients with cancer, especially during the patient's last month of life.^{3 4} In a population-based cohort study conducted in the UK, it was found that 30.7% patients visited the ED once in their last month of life and 5.1% visited multiple times.⁵

Current knowledge reveals the positive outcomes of early initiation of palliative care in EDs.⁶ Most recent studies proved that early referral to the ED may be useful for patients who may benefit from palliative care.⁷ This integration can help to establish patients' care preferences, coordinate the aggressiveness of treatment, manage symptoms and place of death, and prevent upcoming undesired admissions.^{2 8-10}

Although the challenges of integrating palliative care practices across care settings are real and well recognised until now, little is known about them. Therefore, this study aimed to explore the attitude and knowledge possessed by emergency

physicians (EPs) in providing palliative care in EDs using the Palliative Care Attitude and Knowledge (PCAK) Questionnaire in all general tertiary hospitals in Kuwait.¹¹

METHOD

A cross-sectional survey was performed in the emergency rooms of all general tertiary hospitals under the Ministry of Health, Kuwait.

Palliative Care Attitude and Knowledge (The PCAK Questionnaire¹¹ is a newly developed questionnaire that is composed of three sections. Section 1 includes demographic data such as age, sex, level of education, work experience, workplace, medical subspecialty and palliative care experience. Section 2 assesses the patient's attitude and has 11 items. It employs a 5-point Likert Scale ranging from strongly disagree (1) to strongly agree (5). A negative or unfavourable attitude was considered if the participant scored ≤ 25 , uncertain attitude if the participant scored >25 but <41 , positive or favourable attitude if the participant scored ≥ 41 . The third section enquires about the physicians' knowledge. It includes two parts: the first part which had 3 questions was about self-reported knowledge and the second part consisted of 12 clinical questions. Regarding self-knowledge, a 5-point Likert Scale was used, ranging from an excellent response (5) to none (1). Regarding basic knowledge scores, poor knowledge was calculated if the participants scored $<50\%$ of the total score (≤ 5 points), fair knowledge if the participants scored $\geq 50\%$ to $<75\%$ (6–9 points), and good knowledge if the participants scored $>75\%$ (≥ 10 points).

The questionnaires were physically distributed to all EPs in all general hospitals in Kuwait and then collected back. The flow chart of the sampling procedure is presented in online supplemental figure S1.

Informed consent was obtained from all the participants. All data manipulation and analyses were performed using SPSS (Statistical Package for Social Science) V.20. A value of $p < 0.05$ was regarded as a sign of statistical significance. The consolidated criteria for reporting observational studies Strengthening The Reporting of OBservational Studies in Epidemiology (STROBE) checklist were used in this study.

RESULTS

Of the total number of physicians working in emergency rooms in Kuwait ($n=156$ physicians), 104 completed the survey in all general tertiary hospitals. The demographic characteristics of the respondents are available in table 1 and online supplemental table S1. Most of the respondents were men ($n=90$, 86.6%), whereas women accounted for only 13.5% ($n=14$). Palliative care training among them was diverse due to varied nationalities and different medical schools. More than five nationalities are working in EDs in Kuwait (eg, Kuwaiti, Egyptians, Syrians, Jordanians,

Indians, Pakistani and others). Till recently, most postgraduate studies in emergency or internal medicine did not integrate palliative care as part of their curriculum. Formal training, which was in the form of workshops lasting for only 2–3 days, in palliative care was only reported in $<10\%$ of the respondents.

The median years of experience was 11 (IQR: 7–13 years). A majority of the respondents had a postgraduate degree in emergency medicine studies ($n=68$; 65.4%), followed by internal medicine studies (12; 11.5%). Only 18.3% ($n=19$) of the EPs had a favourable attitude towards palliative care, while about 76.9% ($n=80$) of them had an uncertain attitude and 4.8% ($n=5$) had an unfavourable attitude. Most of them agreed on the need for palliative care services for all adults and children who were terminally ill, not just those with cancer (Question (Q)7: $n=65$; 62.5%) and also approved that palliative care benefits include enhanced quality of life for the patient and the family (Q9: $n=81$; 77.9%), skilled care for terminally ill patients (Q10: $n=82$; 78.8%), and expert pain and symptom management (Q11: $n=85$; 81.7%). Because of the lack of shared medical records, they emphasised the lack of timely communication between palliative care providers and themselves (Q2: $n=71$; 68.3%). Many of them, dissatisfied with palliative care services in the past (Q1: $n=61$; 58.7%), reported unfamiliarity with the currently available palliative care services (Q3: $n=65$; 62.5%) and its types (Q5: $n=54$; 51.9%). Furthermore, the uncertainty about the length of coverage was 53.8% (Q4: $n=56$). Generally, EPs with experience of ≥ 11 years had significantly better attitude scores than EPs with experience <11 years ($p=0.019$) (online supplemental table S2). Most of the EPs ($n=73$, 70.28%) did not discuss the patients' need for palliative care either with the patients or with their families. It was found that 44 (42.3%) physicians reported little or no knowledge of pain assessment and management, while 58 (55.8%) and 41 (39.4%) reported good knowledge of other symptoms assessment and management, and counselling, respectively (table 1).

The overall percentage of EPs that responded correctly to most of the questions on the basic knowledge of palliative care was only 16 (15.4%), while 37 (35.6%) had fair knowledge; unfortunately, many of them ($n=51$; 49%) responded to $>50\%$ of the questions incorrectly. Surprisingly, none of the EPs answered all the questions correctly. Q11 for the symptoms of cord compression was the one with the highest percentage of correct answers (Q11: $n=94$; 90.4%), while Q8 regarding the most effective treatment for refractory dyspnoea had the lowest rate of correct answers (Q8: $n=18$; 17.3%). The EPs had mostly poor to fair knowledge regarding opioid handling, such as types of opioids (Q3: $n=57$; 54.8%), the WHO ladder for pain management (Q7: $n=39$; 37.5%), opioids toxicity (Q8: $n=31$; 29.8%), use of oral opioids (Q15:

Table 1 General description of the emergency physician respondents in Kuwait

	Total (n=104)	Experience <11 years (n=50)	Experience ≥11 years (n=54)	P value*
Age	38.83 (±9.5)	32.12 (3.88)	45.03 (8.87)	<0.001
Sex				
Male	90 (86.6%)	39 (78%)	51 (94.4%)	0.014
Female	14 (13.5%)	11 (22%)	3 (5.6%)	
Nationality				
Kuwaiti	21 (20.2%)	18 (38%)	3 (5.6%)	<0.001
Non-Kuwaiti	83 (79.8%)	32 (64%)	51 (94.4%)	
Qualification				
MBBS	30 (28.8%)	21 (42%)	9 (16.7%)	
Masters	59 (56.7%)	24 (48%)	35 (64.8%)	0.202†
MD, MRCP/MRCS	15 (14.5%)	5 (10%)	10 (18.6%)	
Specialty				
ER	68 (65.4%)	32 (64%)	36 (66.7%)	
Internal medicine	12 (11.5%)	2 (4%)	10 (18.5%)	
Surgery	10 (9.6%)	4 (8%)	6 (11.1%)	
Family medicine	3 (2.9%)	3 (6%)	0	
Others	11 (10.6%)	9 (18%)	2 (3.7%)	0.007†
Position				
Assistant registrar	6 (5.8%)	6 (12%)	0	
Registrar	86 (82.7%)	40 (80%)	46 (85.2%)	0.020†
Senior registrar	8 (7.7%)	4 (8%)	4 (7.4%)	
Specialist/consultant	4 (3.8%)	0	4 (7.4%)	
Discussion about palliative care				
No patients	73 (70.2%)	34 (68%)	39 (72.2%)	
1 to 5 patients	23 (22.1%)	11 (22%)	12 (22.2%)	
6 to 10 patients	6 (5.8%)	4 (8%)	2 (3.7%)	0.726†
11 to 15 patients	1 (1%)	1 (2%)	0	
>15 patients, families	1 (1%)	0	1 (1.9%)	
Self-assessment of his knowledge in:				
1-Pain				
Excellent	3 (2.9%)	1 (2%)	2 (3.7%)	
Very good	15 (14.4%)	8 (16%)	7 (13%)	
Good	42 (40.4%)	21 (42%)	21 (38.9%)	0.311†
Weak	29 (27.9%)	10 (20%)	19 (35.2%)	
None	15 (14.4%)	10 (20%)	5 (9.3%)	
2-Other symptoms				
Excellent	4 (3.8%)	2 (4%)	2 (3.7%)	
Very good	21 (20.2%)	10 (20%)	11 (20.4%)	0.683†
Good	58 (55.8%)	28 (56%)	30 (55.6%)	
Weak	14 (13.5%)	5 (10%)	9 (16.7%)	
None	7 (6.7%)	5 (10%)	2 (3.7%)	
3-Counselling				
Excellent	6 (5.8%)	2 (4%)	4 (7.4%)	
Very good	29 (27.9%)	15 (30%)	14 (25.6%)	
Good	41 (39.4%)	20 (40%)	21 (38.9%)	0.402†
Weak	18 (17.3%)	6 (12%)	12 (22.2%)	
None	10 (9.6%)	7 (14%)	3 (5.6%)	

*A value of $p < 0.05$ is statistically significant.

†Fisher's exact test.

MBBS, Bachelor of Medicine, Bachelor of Surgery; MD, Medical Doctorate; MRCP/MRCS, Membership of the Royal College of Physicians/ Membership of the Royal College of Surgeons.

n=19; 18.3%) and delirium (Q4: n=62; 59.65%), and management of catastrophic bleeding in a palliative care setting (Q10: n=20; 19.2%) (online supplemental table S3).

By univariate analysis only better knowledge and years of experience were associated with a positive attitude. Based on the literature review^{12–15} and expert consensus we tested whether better knowledge can be an independent predictor of positive attitude and adjusted for possible confounding factors including sex, age, nationality, qualification, position, subspecialty and years of experience.

By using the generalised linear method to find out the independent predictors of a positive attitude towards palliative care, we found that ≥ 11 years of experience (median years of experience) and better knowledge scores were independent predictors of positive attitude after adjusting for age, sex, qualifications, specialty, position and nationality (OR: 5.747 (CI 1.031 to 25.00), 1.458 (CI 1.148 to 1.851); p values: 0.021, 0.002, respectively) (online supplemental table S4).

DISCUSSION

To the best of our knowledge, this is the first survey of its kind conducted in Kuwait to evaluate PCAK targeting EPs anywhere in the entire region.

In this study, female physicians represented <14% of the total respondents. In Arab countries, female physicians face career development challenges due to early marriage and lack of support from their male guardians for travel and continuation of their professional training.¹⁶ In one study, female physicians were found to select primary healthcare or medical specialties related to women and children or non-clinical employment and rarely pursued rigorous medical specialties.¹⁷ This differs from the UK where 40% of EPs and ED physicians are women (nearly half) who are highly efficient and even superior to male physicians.¹⁸

In this study, 76.9% of the EPs had an uncertain attitude towards palliative care, while only 18.3% had a favourable or positive attitude. This was mainly due to dissatisfaction with palliative care services, types, accessibility, length of coverage, and lack of timely communication between them and palliative care providers, as reported in this study. These results are similar to the original results of the PCAK Questionnaire.¹⁰

This is similar to another study conducted by Lamba *et al*¹⁹ about barriers of integrating palliative care into EDs using a 5-point Likert Scale (1=strongly disagree, 5=strongly agree). The highest scores were found in lack of 24/7 PC services (score, 4.4), lack of shared medical records (score, 4.2), and miscommunication and emotional distress associated with the discussion of the goal of care (score, 3.3), and the crowded ED environment (score, 2.8).¹⁹

Many factors affect the attitude of EPs depending on their diverse experiences, which range from positive, encouraging to a negative and distressing experience.²⁰

This sometimes includes a sense of inability in the physicians to alter the course of the disease^{9 21} or feeling anxious and uncomfortable about discussing death and dying with the terminally ill patient.^{22 23} Lack of awareness about the spectrum of palliative care services and the absence of shared medical records between palliative care and EDs can cause communication-related issues. These can hinder the quality of care provision, especially at the end of life. Nearly half of the EPs (49%) had poor knowledge especially of opioid handling and managing of dyspnoea and catastrophic bleeding in a palliative setting. Although many of them subjectively reported good knowledge of counselling, and assessment and management of other symptoms (other than pain), they strongly agreed that palliative care is important for EPs' competence.^{9 24}

The physicians had mostly poor knowledge regarding opioid handling, delirium and management of catastrophic bleeding in the palliative setting. This is similar to many studies that reported a lack of knowledge in palliative care, especially in pain management proficiency.^{24 25}

The settings of emergency room such as crowded spaces, noisy environments, compromised privacy, frequent interruptions, time constraints, illness complexity and medicolegal threats^{26 27} make the initiation of palliative care discussions less than ideal in these settings.^{9 27} Unfortunately, because of being doubtful about the diagnosis and concerns of diminishing patients' or families' hopes or believing that patients are not prepared to listen to forthcoming information, often physicians hesitate to discuss patient prognosis either with the patients or their families.²⁷ Subsequently, aggressive interventions may ultimately be misaligned with overall goals of care, which can be retrospectively viewed as futile, harmful and painful.²⁸

The old model of palliative and emergency medicine as being mutually exclusive should be changed and instead, to be viewed as rather synergistic. Their relationship must evolve to achieve success in providing complex, comprehensive and compassionate care.²⁵ In 2013, the American College of Emergency Physicians, in the 'Choosing Wisely' campaign, emphasised early palliative care referral for patients with advanced cancer.²⁹ Nowadays, many educational interventional studies have started to focus on increasing awareness about palliative care medicine in the ED, aiming to potentially improve patient care and symptoms, and then measuring the number of palliative care consultations made before and after the educational intervention.^{30–33}

In the last few years, many countries such as the USA³⁴ and Canada³⁵ have started to implement core palliative care domains in emergency medicine. EPs face palliative care situations much more often than thoracotomies during their careers. Therefore, advanced palliative care competencies should be a part

of the EPs' skill set, in the same manner as advanced airway management.³⁶

Many studies have reported a significant correlation between the physician's level of knowledge and attitudes towards palliative care. This highlights that as participants' level of knowledge increases, their attitudes become more positive in hospitals especially in places like Ethiopia,¹³ Saudi Arabia¹⁴ and India.¹⁵ Thulesius *et al* suggested initiatives to educate physicians working in EDs to help them change their negative attitudes and contribute to the better quality of patient care.¹²

Limitations of the study

Most physicians working in governmental EDs in Kuwait were recruited in the study, but private hospitals or hospitals under other ministries, such as the ministries of interior and oil, were not included in the study. We observed lesser numbers of consultants/specialists in our sample despite distributing the questionnaire to all physicians in EDs. This may be attributed to the unwillingness to participate or physical unavailability inside EDs most of the time. In addition, most of the workload in EDs in Kuwait is carried out by registrars and senior registrars with a much smaller number of consultants/specialists.

CONCLUSION

Despite recognising palliative care as an important competence, the majority of EPs in Kuwait had uncertain attitudes and poor knowledge of palliative care. Lack of knowledge, direct accessibility to palliative care services and lack of support from palliative medicine specialists were the main reasons for an uncertain and negative attitude.

RECOMMENDATION

Efforts should be made to enhance physician training and awareness about available palliative care services. Direct access to medical records between palliative care and different EDs will improve communication between them and improve the quality of care provided to those patients. Attention should be given to palliative care by the national health policy. There is an urgent need for it to be incorporated into the national curriculum of medical students and EPs' education.

Ethics approval and consent to participate

The research project has been approved by the Institutional Review Board (IRB) of the Ministry of Health, Kuwait (No.210/2016, March 2016) conforms to the provisions of the Declaration of Helsinki. All subjects gave informed consent and their anonymity was preserved.

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REFERENCES

- 1 Grudzen CR, Richardson LD, Hopper SS, *et al*. Does palliative care have a future in the emergency department? discussions with attending emergency physicians. *J Pain Symptom Manage* 2012;43:1–9.
- 2 Elsayem AF, Elzubeir HE, Brock PA, *et al*. Integrating palliative care in oncologic emergency departments: challenges and opportunities. *World J Clin Oncol* 2016;7:227–33.
- 3 Lowery DS, Quest TE. Emergency medicine and palliative care. *Clin Geriatr Med* 2015;31:295–303.
- 4 Reuter Q, Marshall A, Zaidi H, *et al*. Emergency Department-Based palliative interventions: a novel approach to palliative care in the emergency department. *J Palliat Med* 2019;22:649–55.
- 5 Henson LA, Higginson IJ, Gao W, *et al*. What factors influence emergency department visits by patients with cancer at the end of life? analysis of a 124,030 patient cohort. *Palliat Med* 2018;32:426–38.
- 6 Nigolian L, Gantioque R, Dexheimer J. Palliative care in emergency medicine. what are we missing? *OJEM* 2019;07:8–15.
- 7 Lipinski M, Eagles D, Fischer LM, *et al*. Heart failure and palliative care in the emergency department. *Emerg Med J* 2018;35:emermed-2017-207186–729.
- 8 Beynon T, Gomes B, Murtagh FEM, *et al*. How common are palliative care needs among older people who die in the emergency department? *Emerg Med J* 2011;28:491–5.
- 9 Rivera MR, Torres FS. Physician attitudes on the provision of palliative care in Puerto Rican emergency departments. *J Palliat Care Med* 2015;5:201.
- 10 Schwenk TL. Physician well-being and the regenerative power of caring. *JAMA* 2018;319:1543–4.
- 11 Al-Ansari AM, Suroor SN, AboSerea SM, *et al*. Development of palliative care attitude and knowledge (PCAK) questionnaire for physicians in Kuwait. *BMC Palliat Care* 2019;18:49.
- 12 Thulesius H, Petersson C, Petersson K, *et al*. Learner-centred education in end-of-life care improved well being in

- home care staff: a prospective controlled study. *Palliat Med* 2002;16:347–54.
- 13 Kassa H, Murugan R, Zewdu F, *et al.* Assessment of knowledge, attitude and practice and associated factors towards palliative care among nurses working in selected hospitals, Addis Ababa, Ethiopia. *BMC Palliat Care* 2014;13:6.
 - 14 Abudari G, Zahreddine H, Hazeim H, *et al.* Knowledge of and attitudes towards palliative care among multinational nurses in Saudi Arabia. *Int J Palliat Nurs* 2014;20:435–41.
 - 15 Das A, Haseena T. Knowledge and attitude of staff nurses regarding palliative care. *Int J Sci Res* 2015;4:1790–5.
 - 16 Aldosari H. The effect of gender norms on women's health in Saudi Arabia. The Arab gulf states institute in Washington (AGSIW), 2017. Available: https://agsiw.org/wp-content/uploads/2017/05/Aldosari_Womens-Health_Online-1.pdf [Accessed Jun 2020].
 - 17 Vidyasagar G, Rea DM. Saudi women doctors: gender and careers within Wahhabic Islam and a 'westernised' work culture. *Womens Stud Int Forum* 2004;27:261–80.
 - 18 GMC. The state of medical education and practice in the UK, 2016. Available: https://www.gmc-uk.org/-/media/documents/SOMEp_2016_Full_Report_Lo_Res.pdf_68139324.pdf [Accessed 3 Jun 2020].
 - 19 Lamba S, Nagurka R, Zielinski A, *et al.* Palliative care provision in the emergency department: barriers reported by emergency physicians. *J Palliat Med* 2013;16:143–7.
 - 20 Cheung KY, Chan KC. Experiences of healthcare professionals in providing palliative end-of-life care to patients in emergency departments: a systematic review protocol. *JBIM Database System Rev Implement Rep* 2016;14:9–14.
 - 21 Peters L, Cant R, Payne S, *et al.* How death anxiety impacts nurses' caring for patients at the end of life: a review of literature. *Open Nurs J* 2013;7:14–21.
 - 22 Tait V, Higgs M, Magann L, *et al.* Attitudes of nonpalliative care nurses towards palliative care. *Intl J of Palliat Care* 2015.
 - 23 Hui D, Bansal S, Park M, *et al.* Differences in attitudes and beliefs toward end-of-life care between hematologic and solid tumor oncology specialists. *Ann Oncol* 2015;26:1440–6.
 - 24 Stone SC, Mohanty S, Grudzen CR, *et al.* Emergency medicine physicians' perspectives of providing palliative care in an emergency department. *J Palliat Med* 2011;14:1333–8.
 - 25 Goldonowicz JM, Runyon MS, Bullard MJ. Palliative care in the emergency department: an educational investigation and intervention. *BMC Palliat Care* 2018;17:43.
 - 26 Jesus JE, Geiderman JM, Venkat A, *et al.* Physician orders for life-sustaining treatment and emergency medicine: ethical considerations, legal issues, and emerging trends. *Ann Emerg Med* 2014;64:140–4.
 - 27 Limehouse WE, Feeser VR, Bookman KJ, *et al.* A model for emergency department end-of-life communications after acute devastating events--part II: moving from resuscitative to end-of-life or palliative treatment. *Acad Emerg Med* 2012;19:1300–8.
 - 28 Forero R, McDonnell G, Gallego B, *et al.* A literature review on care at the end-of-life in the emergency department. *Emerg Med Int* 2012;2012:1–11.
 - 29 ABIM. The American college of emergency physicians (ACEP) in "choosing wisely" campaign, 2013. Available: <http://www.choosingwisely.org/nations-emergency-physiciansannounce-list-of-test-and-procedures-to-questionas-part-of-choosing-wisely-campaign/> [Accessed 3 Apr 2020].
 - 30 Zeng H, Eugene P, Supino M. Would you be Surprised if this patient died in the next 12 months? using the surprise question to increase palliative care consults from the emergency department. *J Palliat Care* 2020;35:221–5.
 - 31 Siegel M, Bigelow S. Palliative care symptom management in the emergency department: the ABC's of symptom management for the emergency physician. *J Emerg Med* 2018;54:25–32.
 - 32 Kistler EA, Stevens E, Scott E, *et al.* Triggered palliative care consults: a systematic review of interventions for hospitalized and emergency department patients. *J Pain Symptom Manage* 2020;60:460–75.
 - 33 Wang DH, Kuntz J, Aberger K, *et al.* Top ten tips palliative care clinicians should know about caring for patients in the emergency department. *J Palliat Med* 2019;22:1597–602.
 - 34 Emanuel LL, Quest T. The education in palliative and end of life care for emergency medicine (EPEC-EM). The EPEC project, 2008. Available: <http://www.epec.net/EPEC/Webpages/epecem.cfm> [Accessed 10 Dec 2015].
 - 35 Baylis J, Harris DR, Chen C, *et al.* Palliative and end-of-life care education in Canadian emergency medicine residency programs: a national cross-sectional survey. *CJEM* 2019;21:219–25.
 - 36 Frist WH, Presley MK. Training the next generation of doctors in palliative care is the key to the new era of value-based care. *Acad Med* 2015;90:268–71.

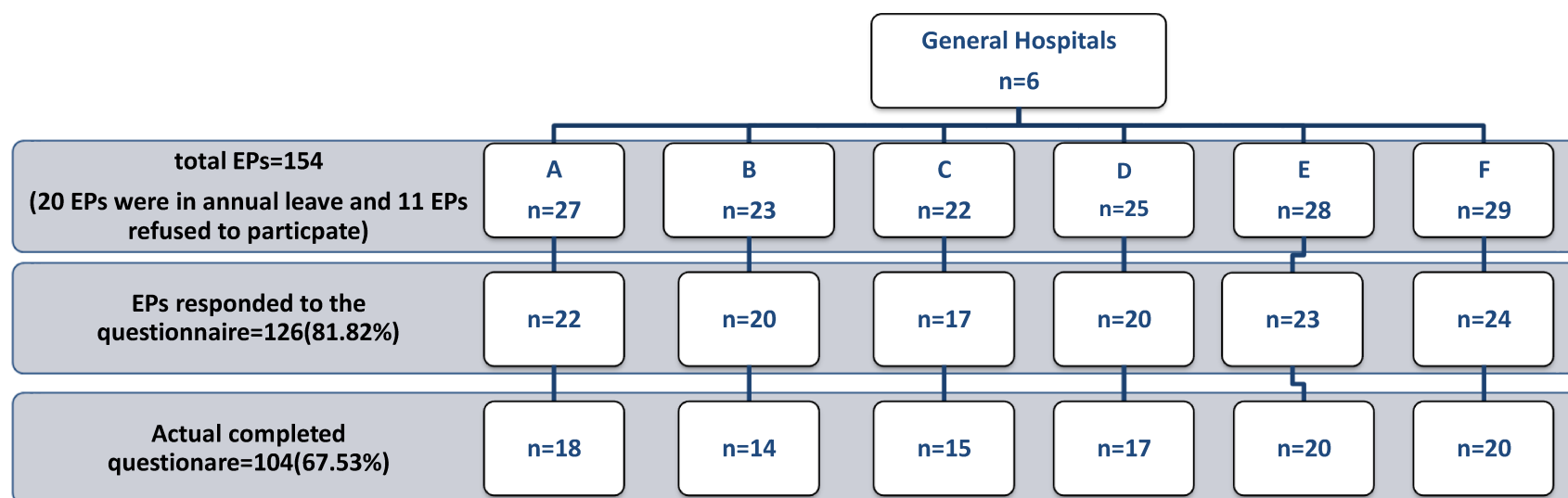


Figure S1: The Flowchart for the sampling procedure

EPs: emergency physicians

Hospital (A): Mubarak AlKabeer, Hospital (B): AlAdan, Hospital, (C): AlSabah, Hospital (D): Al-Jahra, Hospital (E): Al-Farawanyia, Hospital (F): Al-Amiri

Table S1: Comparison between the emergency physicians' characteristics working in different hospitals in Kuwait

	Hospital (A) (N=18)	Hospital (B) (N=14)	Hospital (C) (N=15)	Hospital (D) (N=17)	Hospital (E) (N=20)	Hospital (F)(N=20)	P value*
Age	40.11(±11.6)	39.64(±10.4)	43.11(±8.8)	34.25(±5.2)	39.4(±9.8)	36.95(±9.0)	0.151
Sex							
• Males	14(77.8%)	13(92.9%)	14(93.3%)	17(100.0%)	16(80.0%)	16(80.0%)	0.249**
• Females	4(22.2%)	1(7.1%)	1(6.7%)	0	4(20.0%)	4(20.0%)	
Nationality							
• Kuwaiti	5(27.8%)	2(14.3%)	2(13.3%)	1(5.9%)	5(25.0%)	6(30.0%)	0.417**
• Others	13(72.2%)	12(85.7%)	13(86.7%)	16(94.1%)	15(75.0%)	14(70.0%)	
Qualification							
• MBBS	4(22.2%)	2(14.3%)	1(6.7%)	3(17.6%)	7(35.0%)	11(55.0%)	0.020**
• Master	12(66.7%)	8(57.1%)	8(53.3%)	14(82.4%)	12(60.0%)	7(35.0%)	
• MD	2(11.1%)	4(28.6%)	6(40.0%)	0	1(5.0%)	2(10.0%)	
Position							
• Assistant registrar	2(11.1%)	0	0	1(5.0%)	1(5.0%)	2(10.0%)	0.151**
• Registrar	14(77.8%)	10(71.4%)	11(73.3%)	16(94.1%)	18(90.0%)	17(85.0%)	
• Senior registrar	1(5.6%)	4(28.6%)	1(6.7%)	0	1(5.0%)	1(5.0%)	
• Specialist/ Consultant	1(5.6%)	0	3(20%)	0	0	0	
Specialty							
• Emergency Medicine	8(44.4%)	12(85.7%)	8(53.3%)	10(58.8%)	16(80.0%)	14(70.0%)	0.007**
• Internal Medicine	5(27.8%)	1(7.1%)	2(13.3%)	2(11.8%)	1(5.0%)	1(5.0%)	
• Surgery	0	0	3(20.0%)	1(5.9%)	3(15.0%)	3(15.0%)	
• Others	5(27.8%)	1(7.1%)	2(13.3%)	4(23.5%)	0	2(10.0%)	
Experience yrs)	14.11(±9.6)	14.79(±10.5)	17.47(±8.5)	9.38(±5.1)	15.05(±10.3)	10.9(±8.4)	0.118
Attitude							
• Positive attitude	7(38.9%)	7(50.0%)	5(33.3%)	4(23.5%)	5(25.0%)	6(30.0%)	0.832**
• Negative attitude	2(11.1%)	2(14.3%)	4(26.7%)	5(29.4%)	3(15.0%)	5(25.0%)	
• Not sure	9(50.0%)	5(35.7%)	6(40.0%)	8(47.1%)	12(60.0%)	9(45.0%)	
Knowledge							
Total score	4.78(2.25)	6.0(2.51)	6.07(2.81)	6.12(2.48)	5.65(2.43)	5.6(2.46)	0.623
• Good knowledge	1(5.6%)	3(21.4%)	4(26.7%)	3(17.6%)	3(15.0%)	2(10.0%)	0.877**
• Fair knowledge	6(33.3%)	4(28.6%)	6(40.0%)	7(41.2%)	7(35.0%)	7(35.0%)	
• Poor knowledge	11(61.1%)	7(50.0%)	5(33.3%)	7(41.2%)	10(50.0%)	11(55.0%)	

* P value < 0.05 is significant **; Fisher Exact

Hospital (A): Mubarak AlKabeer, Hospital (B): AlAdan, Hospital, (C): AlSabah, Hospital (D): Al-Jahra, Hospital (E): Al-Farawanyia, Hospital (F): Al-Amiri

Table S2: Distributions of the emergency physicians' attitude towards palliative care in Kuwait

		Total (n=104)	experience <11yrs(n=50)	experience ≥11yrs(n=54)	p- value*
Q1-I have been dissatisfied with PC services in the past	Positive attitude	16(15.4%)	5(10%)	11(20.4%)	0.232
	Negative attitude	61(58.7%)	29(58%)	32(59.3%)	
	Not sure	27(26%)	16(32%)	11(20.4%)	
Q2-I feel there is a lack of timely communication between PC providers and myself.	Positive attitude	10(9.6%)	5(10%)	5(9.35)	0.992
	Negative attitude	71(68.3%)	34(68%)	37(68.5%)	
	Not sure	22(21.2%)	11(22%)	12(22.2%)	
Q3- I am not familiar with PC services in this community.	Positive attitude	17(16.3%)	6(12%)	11(20.4%)	0.358
	Negative attitude	65(62.5%)	31(62%)	34(63%)	
	Not sure	22(21.2%)	13(26%)	9(16.7%)	
Q4-I am uncertain of the length of coverage under the PC benefit.	Positive attitude	13(12.5%)	4(8%)	9(16.7%)	0.006
	Negative attitude	56(53.8%)	35(70%)	21(38.9%)	
	Not sure	35(33.7%)	11(22%)	24(44.4%)	
Q5- I am uncertain of the type of services covered under the PC benefit.	Positive attitude	13(12.5%)	7(14%)	6(11.1%)	0.925
	Negative attitude	54(51.9%)	26(52%)	28(51.9%)	
	Not sure	37(35.6%)	17(34%)	20(37%)	
Q6- Patients or families are unwilling or unready to elect PC services.	Positive attitude	29(27.9%)	15(30%)	14(25.9%)	0.910
	Negative attitude	33(31.7%)	15(30%)	18(33.3%)	
	Not sure	42(40.4%)	20(40%)	22(40.7%)	
Q7- All adults and children who are terminally ill are candidates for PC services, not just those with cancer.	Positive attitude	65(62.5%)	29(58%)	36(66.7%)	0.561
	Negative attitude	11(10.6%)	5(10%)	6(11.1%)	
	Not sure	28(26.9%)	16(32%)	12(22.2%)	
Q8-Patients receiving radiation for palliation of symptoms are not candidates for PC.	Positive attitude	49(47.1%)	10(20%)	13(24.1%)	0.691
	Negative attitude	23(22.1%)	26(52%)	23(42.6%)	
	Not sure	32(30.8%)	12(28%)	18(33.3%)	
Q9- PC benefits include enhanced quality of life for the patient and family.	Positive attitude	81(77.9%)	39(78%)	42(77.8%)	0.763**
	Negative attitude	6(5.8%)	2(4%)	4(7.4%)	
	Not sure	17(16.3%)	9(18%)	8(14.8%)	
Q10-PC benefits include skilled care for terminally ill patients.	Positive attitude	82(78.8%)	42(84%)	40(74.1%)	0.091**
	Negative attitude	5(4.8%)	0(0%)	5(9.3%)	
	Not sure	17(16.3%)	8(16%)	9(16.7%)	
Q11-PC benefits include expert pain and symptom management.	Positive attitude	85(81.7%)	40(80%)	45(83.3%)	0.608**
	Negative attitude	4(3.8%)	3(6%)	1(1.9%)	
	Not sure	15(14.4%)	7(14%)	8(14.8%)	

PC: palliative care.* p-value < 0.05 is significant.

** : Fisher Exact

Table S3: Distributions of the emergency physicians' knowledge towards palliative care in Kuwait

		Total(N=104)	experience <11yrs(n=50)	experience ≥11yrs(n=54)	p- value*
Knowledge	Total score	5.68(2.5)	5.92(2.20)	5.46(2.68)	0.347
Objective assessment					
4- PC Definition	True	79(76%)	43(86%)	36(66.7%)	0.024
	False	25(24%)	7(14%)	18(33.3%)	
5- Members of PC team	True	83(79.8%)	43(86%)	40(74.1%)	0.149
	False	21(20.2%)	7(14%)	14(25.9%)	
6- Weak Opioids	True	57(54.8%)	28(56%)	29(46.3%)	0.846
	False	47(45.2%)	22(44%)	25(46.3%)	
7- Delirium	True	62(59.6%)	33(66%)	29(53.7%)	0.234
	False	42(40.4%)	17(34%)	25(46.3%)	
8- Dyspnea	True	18(17.3%)	9(18%)	9(16.7%)	0.857
	False	86(82.7%)	41(82%)	45(83.3%)	
9- Hypercalcaemia	True	65(62.5%)	29(58%)	36(66.7%)	0.420
	False	39(37.5%)	21(42%)	18(33.3%)	
10- WHO pain management ladder	True	39(37.5%)	21(42%)	18(33.3%)	0.420
	False	65(62.5%)	29(58%)	36(66.7%)	
11- Opioid toxicity	True	31(29.8%)	20(40%)	11(20.4%)	0.029
	False	73(70.2%)	30(60%)	43(79.6%)	
12- SVC obstruction	True	25(24%)	6(12%)	19(35.2%)	0.011
	False	79(75.9%)	44(88%)	35(64.8%)	
13- Catastrophic bleeding	True	20(19.2%)	10(20%)	10(18.5%)	0.848
	False	84(80.8%)	40(80%)	44(81.5%)	
14- Spinal cord compression	True	94(90.4%)	45(90%)	49(90.7%)	0.999**
	False	10(9.6%)	5(10%)	5(9.3%)	
15- Oral opioids	True	19(18.3%)	9(18%)	10(18.5%)	0.945
	False	85(81.7%)	41(82%)	44(81.5%)	

PC: palliative care, WHO: World Health Organization, SVC: superior venacaval obstruction.* p-value < 0.05 is significant

** : Fisher Exact

Table S4: Generalized linear model of predictors of positive attitude:

	β	SE	OR	95% CI		<i>p</i> -value
				Lower	Upper	
Sex (male)	0.641	0.805	1.899	0.392	9.194	0.426
Age	0.025	0.038	1.026	0.953	1.104	0.501
Nationality (Kuwaiti)	0.393	0.809	1.482	0.304	7.233	0.627
Qualification (master, MBBS)	0.621	1.01	0.538	0.075	3.877	0.538
Position (assistant registrar or registrar)	0.419	1.19	0.658	0.064	6.752	0.724
Subspecialty	0.399	0.567	0.538	0.075	3.877	0.538
Years of experience	1.75	0.756	5.747	1.031	25.00	0.021
Basic knowledge score	0.377	0.122	1.458	1.148	1.851	0.002

* *p*-value < 0.05 is significant

β : beta

SE: standard error

OR: Odds Ratio

CI: Confidence interval