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RESEARCH PAPER

Nurses' knowledge of advance directives and perceived confidence in end-of-life care: a cross-sectional study in five countries

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Nurses' knowledge of advance directives and perceived confidence in end-of-life care: a cross-sectional study in five countries

Nurses' knowledge regarding advance directives may affect their administration and completion in end-of-life care. Confidence among nurses is a barrier to the provision of quality end-of-life care. This study investigated nurses' knowledge of advance directives and perceived confidence in end-of-life care, in Hong Kong, Ireland, Israel, Italy and the USA using a cross-sectional descriptive design ($n = 1089$). In all countries, older nurses and those who had more professional experience felt more confident managing patients' symptoms at end-of-life and more comfortable stopping preventive medications at end-of-life. Nurses in the USA reported that they have more knowledge and experience of advance directives compared with other countries. In addition, they reported the highest levels of confidence and comfort in dealing with end-of-life care. Although legislation for advance directives does not yet exist in Ireland, nurses reported high levels of confidence in end-of-life care.

Key words: advance directives, confidence, end-of-life, knowledge, nursing.

INTRODUCTION

An advance directive (Ad) is defined as a mechanism by which a competent individual expresses his or her wishes should circumstances arise in which he or she is no longer able to make rational and sound decisions regarding his or her medical treatment.[1] An Ad can be used to express a decision with regard to place of care, level of care, specific medical treatments and withholding and/or withdrawing life support treatments. Ads promote respect for the patient's wishes.[2] Nurses' knowledge of what constitutes an Ad may affect both administration and completion of Ads, as well as advance care planning (ACP) and end-of-life (EOL) care.

The provision of high-quality care at EOL is of high priority among policy-makers worldwide.[3] In Ireland, there is considerable discussion concerning a legislative framework for Ads, as a means of ensuring that wishes are respected at EOL.[3] There may be an assumption that in countries where legislation for Ads exists, nurses have knowledge of Ads. However, this assumption may need to be examined. Where there is no legislation for Ads, it is important that nurses' knowledge about Ads is ascertained in order to inform nurse education. Yet few studies have described nurses' general knowledge of Ads alongside their perceived confidence in EOL care. In the US, Ads have a legal basis in all 50 states, and nurses routinely engage in communication about Ads in acute care settings.[4] In Israel, legislation on Ads is closely linked to religious beliefs, and as a result, the implementation of Ads is more complex.[5] There is currently no legislation for Ads in Hong Kong, Ireland and Italy. The research reported in this paper is part of a larger multi-national study that also examined nurses' EOL treatment choices.[6] This collaboration of researchers from Hong Kong, Ireland, Israel, Italy and the US was interested in examining nurses' general knowledge about Ads, in conjunction with their perceived confidence in EOL care in each of their countries, with the purpose of informing nurse education with regard to Ads and EOL care.

BACKGROUND

In the US, the Patient Self-Determination Act (PSDA)[7] requires that all institutions receiving government funding inform patients admitted to the hospital of their legal right to make treatment decisions, including the option to complete an Ad. However, according to Wilkinson *et al.*,[8] EOL decision-making in the US is often poorly implemented, with patients receiving care inconsistent with their EOL preferences. In Israel, the Dying Patient Act[9] proposes to regulate medical treatment of terminally ill patients while balancing respect for life and quality of life. This legislation allows refusal of medical treatment by terminally

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ill patients who are legally competent. In Hong Kong, the standard procedure for providing both medical and nursing treatment to incompetent patients is based on the leading cases in common law as outlined in the Mental Health Ordinance.[10] In Ireland, the Law Reform Commission[11] stated that it should be acceptable to have various kinds of personal directives that are legally enforceable, provided the directions are themselves legal. In Ireland, the medical team will often discuss treatment preferences with both the patient and the patient's next of kin. However, there is no legal obligation to do so. In Italy, there is no approved Ad regulation, although the National Bioethics Committee released a specific document requesting legislation.[12]

A number of barriers exist to the implementation of Ads in clinical practice.[13,14] Some are associated with ethical and legal issues,[15,16] but other barriers are due to a lack of nurse knowledge about Ads and lack of competency in EOL care.[17] Overcoming legal and ethical barriers may be difficult; however, those related to lack of knowledge and confidence may be more easily addressed. Much of the international research to date has focused on patient knowledge, attitudes, and experience of Ads,[18,19] completion rates of Ads[20,21] and educational needs of nurses.[22,23] A review of research revealed a paucity of cross-cultural studies describing nursing knowledge of Ads and perceived confidence in EOL care.

Knowledge of Ads

Lipson *et al.*[24] found that 95% and 99% of questions related to definition of Ads were answered correctly by registered nurses in Ohio ($n = 719$). Likewise, Jezewski *et al.*[25] found high scores in knowledge of Ads among oncology nurses ($n = 794$) in the US but lower scores on knowledge of the PSDA and State Law. Similar findings were reported in Illinois by Walerius *et al.*,[17] who found that although legislation in the US has been in place over a period of time, 77% of nurses from general medical–surgical, rehabilitation, oncology, intensive care unit and recovery units in a medical centre scored low in general knowledge of Ads, PSDA and State Law. The participants agreed that nurses should be involved in helping patients to complete Ads, but only 20% agreed that nurses spent enough time discussing Ads with patients.[25] A similar lack of knowledge of Ads among US nurses ($n = 87$) was found by Putman-Casdorph *et al.*,[26] specifically with regard to legal issues.

Although Yee *et al.*[27] found that nurses in Singapore favoured the use of ACP in the medical care of seriously ill patients, only 32% viewed implementation of ACP as part of their role and most preferred to allocate this responsibility to physicians. In Hong Kong, a palliative care program for 108 home care patients suffering from life-limiting diseases and their family caregivers was delivered by 58 registered nurses who were home care providers. The nurses were trained on the theory and practice of ACP, communication skills and psychosocial intervention. The results showed that the home care nurses empowered the patients to strive for better management of death and dying. The palliative care program was effective and resulted in less hospital readmissions, a better quality of life and a higher level of family satisfaction with care provided.[28] Because Ads are an important element in ACP,[28] lack of knowledge of ACP may affect nurses' confidence in their role with regard to Ads and competence in communication with patients regarding EOL decisions.

Nurses' confidence in providing care at EOL

A review of the literature reveals that lack of confidence and competence among nurses may be a barrier to the provision of quality EOL care. In Australia, Philips *et al.*[29] examined independence or dependence in relation to patient/family interactions and patient management of EOL care needs among nurses and care assistants working in aged care. The majority (70%) had received on-the-job training and only 2% of participants had a specialist qualification in palliative care. Although most nurses indicated independence in all of the interactions, they also reported educational needs in EOL care, for example, on the topics of communication, delirium, dyspnoea, DNR, pain, spirituality, nausea and vomiting, hydration and constipation.[29]

Communication in EOL care was also identified as an educational need in a sample of UK nurses ($n = 34$).[30] Lack of competence in the provision of palliative care at EOL was also reported.[22] These researchers identified palliative care education needs in a sample of registered general nurses (RGNs; $n = 205$) working in residential care settings for older people in Ireland. Only two-thirds of RGNs felt competent in caring for a patient with a syringe driver and less than half reported competence in assessing a patient's need for a syringe driver. Only 40% of RGNs were aware of the correct process for referral to specialist palliative care services. The most common referrals were for pain or symptom management, with few referrals for family support or emotional issues.[22] Similar to previous research,[29] many participants did not think it was their responsibility to enter into discussions with patients on death

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and dying. Participants attributed these communication issues to lack of education and competence and to unclear role boundaries.

In contrast, Brazil *et al.*[31] found that nurses ($n = 119$) working in long-term care homes had high levels of perceived self-efficacy with regard to patient management, communication and multidisciplinary teamwork. These results were attributed to the uniqueness of the long-term care setting, which provides nurses with an opportunity to develop strong interpersonal relationships with residents and gain a better understanding of EOL care preferences. Deficiencies in nurses' self-perception of EOL knowledge were found in a study of 185 intensive care nurses in the US, and confidence in EOL care was associated with a greater self-perception of EOL knowledge and practice experience.[32] This research indicates that further education for nurses is necessary in order to facilitate high-quality EOL care in all care settings.

Progress has been made with regard to the implementation of ACP and Ads in clinical practice, with legislative frameworks guiding practice in many countries including Israel and the US. Yet studies in the US have identified some deficits with regard to nurses' knowledge about Ads[25] and their confidence in providing EOL care.[32] In Hong Kong, Ireland and Italy, no legislation has been enacted and no research has previously examined knowledge of Ads in these countries. Although there are a number of legally valid guidelines that health-care professionals can follow, such legislative restrictions can create issues regarding the implementation of Ads. Furthermore, there is a paucity of research examining nurses' knowledge of Ads, along with their perceived confidence and comfort in providing EOL care, across different countries. Hence, this research addresses this gap by analysing nurses from five countries. This research adds to the literature on Ads and EOL care by describing nurses' knowledge about Ads along with their confidence in delivering EOL care across different legislative and cultural environments.

Aim

The aim of the research was to examine nurses' knowledge of Ads and self-perceived confidence in EOL care, in Hong Kong,[1] Ireland, Israel, Italy and the US.

METHODS

Design, setting and sample

A cross-sectional, descriptive design was used. In each country, a research coordinator collected data from a convenience sample of nurses recruited from clinical and educational settings as part of a larger study on nurses' EOL decision-making.[6] The samples were selected according to availability and were dependent on the management of data collection in each country and, therefore, may not be representative. Each site was responsible for its own data collection. Consent was implied by completion of the survey; 1089 nurses completed the questionnaire (Hong Kong $n = 157$, Ireland $n = 186$, Israel $n = 141$, Italy $n = 261$ and US $n = 344$).

Instrument

Data for the larger study were collected using a survey instrument developed by Molloy (2011) and Molly and Russo (2011) and tested and validated in extensive research conducted in Canada.[33–35] The instrument included four 'yes' or 'no' questions on participants' knowledge and experience. Questions referred to knowledge about Ads prior to the study, whether nurses had experience in working with Ads, had cared for a patient who had an AD and whether they had completed an Ad themselves. A further six questions related to nurses' feeling of confidence and comfort in providing EOL care. Nurses were asked to agree or disagree with statements provided, for example, 'You feel comfortable dealing with patients at the end of life (last few weeks or months of life)'. In addition, two questions asked participants to state whether they agree or disagree that (i) they had adequate training and (ii) adequate experience in EOL care. On these eight questions, the respondents were asked to indicate their agreement on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). The variables 'age' and 'years of experience' were reclassified before testing for correlations: a median of 35 years of age and a median of 21 years of professional experience were used as the cut-off score.

Ethical considerations

Ethical approval was granted by the affiliated clinical research ethics committee in each country. Participants were provided with an information leaflet outlining the research aims and objectives, and consent was implied by completion of the survey. Participants were not required to provide any identification, therefore, anonymity was maintained.

Data collection and analysis

A research coordinator collected data in each country between June 2011 and July 2012, and data were analysed using SPSS (Version 18). Descriptive statistics

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(frequencies, percentages and means (SD)) were obtained for the research variables. Chi-squared tests were used to examine categorical variables[36] (correlations between knowledge of advance directives and sociodemographic variables). Mann–Whitney *U*-test[37] was used to compare the means of two groups of nurses divided by age and professional experience (older and younger than 35 years, less and more than 21 years of professional experience) for differences in their confidence and comfort in providing EOL care. A Kruskal–Wallis one-way analysis of variance[37] was used to compare the means of nurses' confidence and comfort in providing EOL care in the five countries and in their perceived adequacy of training and experience in EOL care. Spearman correlations between variables[37] were used to evaluate the impact of adequate training in providing EOL care on nurses' confidence and comfort.

RESULTS

Demographics

All participants ($n = 1089$) were Registered Nurses, and most were female (85%, $n = 929$). The majority were general nurses (75%, $n = 813$), working within acute care (60%, $n = 648$). The most common age profile of the Hong Kong, Ireland and Israeli samples was 18–35 years old, and most nurses in these samples had less than 10 years postregistration experience (Table 1). However, of participants recruited in the US, 79% ($n = 273$) were older than 36 years and most had over 21 years of clinical experience (63%, $n = 216$). For further details on the demographic background of the sample, see Table 1.

Knowledge of Ads

The values in Tables 2 and 3 represent those respondents who answered 'Yes' to each item. Knowledge of Ads was significantly related to gender ($P = 0.004$), type of practice area ($P = 0.04$), age ($P < 0.01$) and years of experience ($P < 0.01$): Nurses who were older than 35 years and had more than 21 years of professional experience reported greater knowledge of Ads (Table 2). Level of education was not significantly associated with knowledge of Ads.

Chi-squared tests showed significant relationships between knowledge of Ads and country, X^2 (4, $n = 1089$) $= 220.00$, $P < 0.001$. More nurses in the US than in the other countries stated that they had knowledge of Ads before participating in the study, and more than half had completed their own Ads. In addition, a significant relationship was found between previous experience of Ads and country, X^2 (4, $n = 1089$) $= 516.29$, $P < 0.001$. More US nurses had previous experience with Ads and had cared for patients who had Ads than participants from other countries. Moreover, less than 24% of nurses in the other four countries had cared for a patient with Ads (Table 3).

Nurses' perceived confidence and comfort in providing EOL care according to respondent country

Comparing the mean scores of nurses from each country, it was found that US nurses are the most comfortable dealing with EOL patients (M = 4.24, SD = 0.86). With regard to nurses' confidence in dealing with patients' symptoms at EOL, US nurses (M = 4.09, SD = 0.9) and Irish nurses (M = 3.7, SD = 1) were more confident than Israeli (M = 3.23, SD = 1.14), Italian (M = 3.18, SD = 1.01) and Hong Kong (M = 3.14, SD = 0.78) nurses. Moreover, nurses in Israel (M = 3.61, SD = 1.28) and Hong Kong (M = 3.36, SD = 0.79) found it more difficult to deal with patients at EOL. Additionally, nurses in the US, Ireland and Italy felt more comfortable dealing with families of EOL patients and with bereaved families, whereas nurses in Hong Kong and Israel felt less comfortable (Table 4).

Nurses' confidence and comfort in dealing with patients' symptoms at EOL by age and professional experience

Comparing the mean score of nurses younger and older than 35 and of nurses with more or less than 21 years of professional experience in all countries, significant differences were found: older nurses (>35 years old), as well as those who have more professional experience (>21 years), felt more confident in managing patients' symptoms at EOL ($Z = 5.80$, $P < 0.01$, $Z = 7.46$, $P < 0.01$, respectively). Moreover, they felt more comfortable dealing with patients at EOL, stopping preventive medications and dealing with relatives and with bereaved families of patients who died. However, dealing with patients at EOL was also more difficult for them (Table 5).

Perceived adequacy of training and experience in EOL care

The US nurses reported more training in EOL care (M = 3.41, SD = 1.17) than nurses in Ireland (M = 2.97, SD = 1.22), Italy (M = 2.87, SD = 1.15), Hong Kong (M = 2.68, SD = 0.9) and Israel (M = 2.32, SD = 1.13) ($P < 0.01$). Similarly, with regard to nurses' experience in

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Table 1 Demographic characteristics of nurse participants in the five countries ($n = 1089$)

Variable	Hong Kong ($n = 157$*)	Ireland ($n = 186$*)	Israel ($n = 141$*)	Italy ($n = 261$*)	Us ($n = 344$*)
Age (years)					
18–35 (% (*n*))	81 (127)	53 (98)	58 (82)	23 (60)	20 (67)
36+ (% (*n*))	11 (17)	44 (82)	40 (57)	77 (201)	79 (273)
Gender					
Male (% (*n*))	17 (26)	6 (12)	13 (18)	30 (78)	4 (14)
Female (% (*n*))	81 (127)	89 (166)	87 (123)	70 (183)	96 (330)
Specific discipline					
General (% (*n*))	77 (121)	61 (113)	61 (86)	88 (230)	76 (263)
Specialist discipline (% (*n*))	17.2 (27)	32 (61)	34 (48)	12 (31)	22 (74)
Other, e.g. research, administration, education (% (*n*))	0 (0)	4 (7)	4 (6)	0 (0)	1.5 (5)
Professional experience (years)					
Less than 10 (% (*n*))	86 (135)	48 (89)	63 (89)	27 (71)	22 (76)
11–20 (% (*n*))	5.7 (9)	24 (44)	18.4 (26)	26 (69)	15 (52)
21+ (% (*n*))	7.6 (12)	27 (50)	18 (25)	46 (119)	63 (216)
Practice area					
Primary/community care (% (*n*))	28 (44)	18 (33)	11 (16)	8 (20)	19 (65)
Acute care (% (*n*))	53 (83)	47 (87)	64 (90)	46 (121)	78 (267)
Other (% (*n*))	11 (17)	30.6 (57)	20 (28)	46 (120)	3.0 (12)

*Percentages may not equal 100% secondary to some missing or non-applicable data in individual categories.

EOL care, US ($M = 3.72$, $SD = 1.14$) and Irish nurses ($M = 3.36$, $SD = 1.24$) felt that they had adequate experience in EOL care, whereas nurses in Italy ($M = 3.05$, $SD = 1.13$), Hong Kong ($M = 2.77$, $SD = 0.95$) and Israel ($M = 2.47$, $SD = 0.95$) reported that they had less adequate training ($P < 0.01$).

In all countries, significant positive correlations were found between adequate training in providing EOL care and both nurses' confident dealing with patients' symptoms at end-of-life and comfort of stopping medications at EOL; the more the nurses had adequate training, the more confidence ($r_s = 0.533$, $P < 0.01$) and comfort ($r_s = 0.47$, $P < 0.01$) they felt. Moreover, confidence dealing with patients' symptoms at EOL was correlated with comfort of stopping medications at EOL ($r_s = 0.671$, $P < 0.01$) (Table 6).

DISCUSSION

The aim of this study was to examine nurses' knowledge of Ads and perceived confidence in EOL care. Concerning Ads, nurses in the US reported that they have more knowledge of Ads than nurses in the other countries studied. This may be due to the presence of Ads legislation in most parts of the US and also to the age and experience of US participants, who were older and more experienced than the other participants. Furthermore, results may be attributed to the inclusion of Ads education programmes in US undergraduate curricula and the recent US government focus on EOL care reform and improvement in the Patient Protection and Affordable Care Act.[38] Previous research on nursing knowledge of Ads has indicated a lack of legal but good general knowledge of Ads.[17,26] However, similar to previous research in countries outside the US, nurses in the other countries had little knowledge of Ads.[27]

Although there is legislation for Ads in Israel, there are a number of barriers to their implementation. Roles and responsibilities of health-care professionals have not been clearly outlined in national and local policies.[39] Furthermore, in Israeli tradition, respect for the sanctity of life is a central value[39] and this may have influenced knowledge of Ads among nurses. The lack of knowledge among Hong Kong, Irish and Italian participants may be due to a lack of legislation for Ads in these countries as well as to a lack of education about Ads. This suggests that at the undergraduate and postgraduate level, education on AD's and ACP should be included in all nursing programmes prior to

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Table 2 Correlations between knowledge of Ads and socio-demographic variables ($n = 1089$)

Variable	Knowledge of Ads *n* (%)	No knowledge of Ads *n* (%)	Chi-squared	*P*-value
Age (years)			22.11	<0.01*
18–35	283 (66)	148 (34)		
36+	494 (79)	134 (21)		
Gender			8.08	0.004*
Female	690 (75)	234 (25)		
Male	94 (63.5)	54 (36.5)		
Level of education			2.658	0.103
BA	56 (50)	57 (50)		
MA and PhD	7 (78)	2 (22)		
Professional			23.38	<0.01*
Experience (years)	445 (67)	210 (33)		
≤21	345 (82)	77 (18)		
>21				
Area of practice			11.21	0.047*
Primary/ community care	126 (71)	51 (29)		
Acute care	488 (76)	157 (24)		
Other	86 (64)	41 (36)		

*$P < 0.05$.

Ads, advance directives.

legislation being enacted. Such education should focus on nurses' perceptions on aspects of palliative care in order to assist patients and families in understanding Ads and participating in ACP interventions and to facilitate decision-making, symptom management, comfort measures and psychosocial support.[28]

In Ireland, national discussion about the introduction of Ads has begun, therefore a priority for government will be the development of policies and guidelines clearly outlining nursing roles and responsibilities with regard to Ads and ACP. Government and worldwide authorities should plan educational campaigns on ACP and Ads to encourage people to complete and use Ads.[28]

As to EOL, our findings show a significant difference between nurses in Ireland, Italy and the US and those in Hong Kong and Israel in their reported confidence and comfort in dealing with patients at EOL. In previous research, nurses' confidence in EOL care was associated with greater self-perception of EOL knowledge and practical experience.[32] Because most nurses in our study reported that they had experience with EOL care, lack of confidence in this instance may be linked to lack of education or lack of knowledge about the patient's wishes. However, US and Irish nurses' report of their adequate experience with EOL care could explain their greater confidence in dealing with patients' symptoms at EOL, compared with nurses from the other countries.

With the exception of US nurses, the majority also reported inadequate training in EOL care. Participants in Hong Kong and Israel were also less comfortable dealing with bereaved families and found it more difficult to deal with patients at EOL. Although the reason for this is not known from our results, we suggest that participants may not be happy to enter into discussions about death and dying with patients[30] without the assistance of ACP or they may perceive a lack of competence in EOL care due to lack of education in palliative care.[29,22] Training in EOL care has a positive impact on nurses' confidence and comfort in providing EOL care. Similarly, practices, confidence and knowledge improve following educational interventions in palliative care.[40] Because in our study deficits in confidence in EOL care existed in all five countries, it is necessary to identify educational needs of nurses with regard to EOL care. Moreover, as age and professional experience are

Table 3 Relationship between knowledge of Ads and respondent country ($n = 1089$)

	Hong Kong % (*n*)	Ireland % (*n*)	Israel % (*n*)	Italy % (*n*)	US % (*n*)	Whole sample % (*n*)	Chi-squared	*P*-value
Knowledge of Ads before participating in the study	49 (77)	75 (139)	52 (72)	62 (161)	100 (344)	73 (793)	220.00	<0.01
Had previous experience with Ads	13 (20)	23 (43)	25 (36)	21 (55)	94 (323)	44 (477)	516.29	<0.01
Had cared for a patient who had an Ad	24 (37)	19 (35)	24 (34)	20 (52)	96 (329)	45 (487)	528.15	<0.01
Had completed their own personal Ads	10 (15)	2 (4)	7 (10)	13 (33)	52 (177)	22 (239)	261.96	<0.01

Ads, advance directives.

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Table 4 Correlations between nurses' confidence and comfort in providing EOL care and respondent country ($n = 1089$) (compared means and standard deviations)

	Hong Kong			Ireland			Israel			Italy			US			Whole sample				
	n	Mean	SD	*n*	Mean	SD	*n*	Mean	SD	*n*	Mean	SD	*n*	Mean	SD	*n*	Mean	SD	Chi-square	*P*-value
Feels comfortable dealing with end of life patients	152	3.29	0.78	185	3.96	0.99	140	2.86	1.27	261	3.40	1.04	344	4.24	0.86	1082	3.68	1.09	22.32	<0.01
Finds it more difficult to deal with end of life patients	152	3.36	0.79	185	2.88	1.26	140	3.61	1.28	261	3.14	1.17	344	2.63	1.31	1082	3.02	1.25	77.8	<0.01
Feels confident dealing with patients' symptoms	152	3.14	0.78	185	3.70	1.00	140	3.23	1.14	261	3.18	1.01	344	4.09	0.90	1082	3.56	1.04	173.3	<0.01
Feels comfortable stopping medications	152	3.12	0.85	185	3.59	1.15	138	2.98	1.27	261	3.48	1.04	344	4.22	0.87	1080	3.62	1.11	187.3	<0.01
Feels comfortable dealing with families of end of life patients	152	2.96	0.94	186	3.77	1.01	139	2.73	1.10	261	3.49	1.03	344	3.95	0.96	1082	3.51	1.09	172.7	<0.01
Feels comfortable dealing with bereaved family	152	2.86	0.92	186	3.71	1.00	139	2.46	1.05	261	3.46	1.02	344	3.96	0.99	1081	3.45	1.12	226.5	<0.01

EOL, end of life.

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Table 5 Nurses' confidence and comfort in providing EOL care by age and professional experience (compared means, standard deviations and Mann–Whitney *U*-test) ($n = 1089$)

Item	Nurses' age <35 years ($n = 429$)	Nurses' age > 35 years ($n = 628$)	*Z*	Professional Experience (years) ≤21 ($n = 660$)	Professional Experience (years) >21 ($n = 422$)	*Z*
Feels comfortable dealing with end of life patients	3.43 ± 1.05	3.86 ± 1.08	6.94*	3.53 ± 1.10	4.01 ± 0.98	6.87*
Finds it more difficult to deal with end of life patients	3.31 ± 1.09	2.82 ± 1.32	5.93*	3.14 ± 1.21	2.79 ± 1.30	4.19*
Feels confident dealing with patients' symptoms	3.29 ± 0.98	3.74 ± 1.05	7.46*	3.44 ± 1.03	3.81 ± 1.03	5.80*
Feels comfortable stopping medications	3.30 ± 1.10	3.85 ± 1.07	8.08*	3.45 ± 1.13	4.00 ± 0.98	7.68*
Feels comfortable dealing with families of end of life patients	3.11 ± 1.08	3.80 ± 1.02	10.07*	3.33 ± 1.12	3.89 ± 0.92	7.63*
Feels comfortable dealing with bereaved family	2.98 ± 1.11	3.78 ± 1.02	11.33*	3.248 ± 1.14	3.89 ± 0.96	8.74*

*$P < 0.01$

EOL, end of life.

Table 6 Correlations of nurses' confidence, comfort and adequate training in providing EOL care ($n = 1089$)

	Feels confident dealing with patients' symptoms at end of life	Feels comfortable stopping medications at end of life	Had an adequate training in care at end of life
Feels confident dealing with patients' symptoms at end of life		0.671**	
Feels comfortable stopping medications at end of life			
Had an adequate training in care at end of life	0.533**	0.473**	

**$P < 0.01$

EOL, end of life.

associated with knowledge of Ads as well as with confidence and comfort in EOL care, less experienced and younger nurses will most likely benefit from increased education, training and exposure to providing and coping effectively with EOL care.[41]

Our findings are limited by the recruitment of a convenience sample. Participants were not required to indicate their specific area of care. Therefore, diverse care settings and experience may have influenced the results. Secondly, participants were not asked to indicate whether they had specific postgraduate nurse education in EOL care. Nonetheless, this study provides preliminary evidence that nurses, even in countries where education and legislation on Ads exist, need more knowledge about Ads, and nurses in all countries require more confidence in providing EOL care.

CONCLUSION

There has been increasing interest in Ads among multidisciplinary health-care researchers and practitioners. This study is the first to describe nurses' knowledge of Ads and their perceived confidence in providing EOL care in five countries. Knowledge of Ads can contribute to nurses'

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confidence in discussing EOL issues with patients and families. A lack of knowledge about Ads may therefore reduce confidence in dealing with patients at EOL. In addition, there appears to be a relationship between education in EOL care and confidence in provision of care. An analysis of the curriculum content related to EOL care in nurses' training among the countries would be beneficial in order to understand differences in nurses' perception of their confidence and comfort in providing care. Our results also add to the discourse regarding the use of Ads for EOL care in Ireland, Italy and Hong Kong, where legislation is not yet in place.

AUTHOR CONTRIBUTIONS

Study Design: AC, GMcC, WM, CMcG, JJF
Data Collection and analysis: EW, MIF, KG, ME, SC, WL, PP, RZ, AC, GMcC, MI
Manuscript writing: AC, EW, GMcC, JJF, MI

NOTES

[1]IT IS NOT ANTICIPATED THAT HONG KONG DATA ARE REPRESENTATIVE OF ALL OF CHINA.

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