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The Relationship of Patient Population and Nurses Certification Status on Nurses' Practices in Preparing Families for the End of Life

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Abstract

While nurses usually prepare family for the patients' final days, little is known about how this is done. The purpose of this study was to describe nurses' beliefs and practices concerning family preparation for dying, focusing on strategies, tailoring, timing and content of preparation. Nurses' preparatory practices were compared by patient population (hospice or palliative care) and the nurses' certification status. A descriptive, comparative survey was conducted. All RN members of the Hospice and Palliative Nurses Association and who met the inclusion criteria (N=2706) were invited and 1434 (53.1%) participated.

Nurses believe families can be prepared, and identified trust and repetition as important strategies. There are significant differences based on population regarding nurses' beliefs about preparation, strategies, tailoring, timing and content. Tailoring differed based on certification status.

This information can be compared to what is known about family preparatory needs to develop preparatory interventions that are tailored to patient and family characteristics. Revisiting the similarities and differences in the practice of nurses in hospice and palliative care is important as the specialty continues to mature to assure that adequate education and proper criteria for certification are being provided for all hospice and palliative care nurses.

Keywords

hospice; palliative; nurse; preparation; family; certification

Introduction

The preparedness of family members for the patient's final days affects mental health, grieving, and the person's response to the experience of the death ¹. Preparation of family for the final days and for the patient's death is most often done by nurses ². Most preparation is focused on what to expect while the patient is dying and practical caregiving skills ^{2,3}. To diminish the physical and emotional suffering of the patient and family at this critical time

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and to develop educational interventions for nurses we need to understand how to best prepare families. Better knowledge of how nurses prepare families in different populations and whether there are differences based on the nurses' certification status are needed to evaluate and inform end-of-life nursing education and certification standards.

Preparation is important to families, yet they frequently report feeling unprepared for the changes in the last week of life ⁴⁻⁶. Good preparation is said to include developing a trusting relationship, providing caregivers with reliable information tailored to the caregiver's needs and allowing them time to process the information⁷ but it is not known whether these elements are present in current preparatory practices.

Hospice staff recommend repeated exposure to preparatory information and preparation over time which are achieved in part by hospices provision of written materials, that the family can revisit ². Hospice staff focused content on the signs of impending death and patient symptoms and reported tailoring preparation based on patient and family factors ⁸. Tailoring consists of choosing specific content, strategies of preparation and means of delivery based on the nurses' assessment of the unique patient and family situation. Timing of the preparation is one means of tailoring the preparatory information. Palliative care team priorities for family preparation have included practical caregiving skills, self-care and what to expect as death approaches ³. While these studies provided insight into family preparation for the final days, many questions remain about nurses' beliefs and practices concerning preparing families.

Little is known how the practice of hospice nurses (HNs), who provide care for patients who have a prognosis of 6 months or less and have chosen hospice services, compares to that of palliative care nurses (PCNs), who provide care for patients with serious, advanced illness who are not enrolled in hospice. Both HNs and PCNs may provide care in a private residence, skilled nursing facility, or assisted living center. HNs may also practice in inpatient hospice. PCNs usually practice in hospitals or outpatient clinics. In 1997, a role delineation study was conducted to determine if the degree of similarity in the practices of HNs and PCNs. It was determined that most of the knowledge and activities were the same and a single examination could test for both ⁹. Since that time, there has not been a comparison of the practices of HNs and PCNs.

Since 1994, the National Board for Certification of Hospice and Palliative Nurses has offered certification to HPNs who have a minimum of 2 years' experience in hospice and palliative nursing and who pass a 150-question examination covering 7 domains of practice ¹⁰. There are currently more than 12,500 certified hospice and palliative RNs (CHPNs)¹¹ and more than 900 advanced certified hospice and palliative RNs (ACHPNs)¹².

According to the American Board of Nursing Specialties, certification is "the formal recognition of the specialized knowledge, skills, and experience demonstrated by the achievement of standards identified by a nursing specialty to promote optimal health outcomes."¹³. Martin's Theory of Critical Thinking of Nurses¹⁴ is based on models by Benner¹⁵ and Paul¹⁶. The theory states that nurse develop clinical expertise (from novice to expert) through the use of knowledge and experience and they develop critical thinking

skills which are used consistently to make appropriate clinical decisions. Nursing certification is an indication of the development of expertise beyond that of a novice and of the certificant's knowledge and consistent application of critical thinking skills.¹⁴

Nursing certification is highly valued by nurses^{17,18} and is associated with increased workplace empowerment¹⁹, enhanced collaboration^{17,20}, improved nurse and patient satisfaction^{17,20,21}, and clinical nursing competence and expertise^{17,20}. Improved knowledge and attitudes about pain and nausea in certified versus non-certified nurses have been described²¹, and an inverse relationship between the number of certified nurses in an ICU and the patient fall rate²². However other studies have failed to demonstrate a significant difference between certified and non-certified nurses with respect to symptom assessment, number of unplanned visits or admissions to care facilities²³, or the prevalence of pressure ulcers and infections¹⁹.

There is little known about what differences may exist in the practice of CHPNs and other nurses who provide care for hospice or palliative care populations. One study addressing differences between certified and non-certified nursing staff members examined demographics and attitudes between certified and non-certified hospice and palliative nursing assistants but did not their practice or patient outcomes²⁴.

The purposes of this study were to describe; 1) nurses' beliefs concerning family preparation for the end of life, 2) strategies used to prepare families, 3) whether and how nurses tailor preparatory messages, including the timing of preparation, 4) the content of preparatory messages concerning the patient's final days, 5) differences in preparatory messages by patient population [hospice versus palliative care] and 6) differences in preparatory messages developed by CHPNs as compared to nurses not so certified, but who are providing hospice and palliative care.

Methods

This descriptive, comparative study used a self-report questionnaire to gather data from hospice and palliative care registered nurses. The Institutional Review Board of the [deleted for peer review] approved this study.

Participants

Hospice and Palliative Nurses Association (HPNA) members were invited to participate because, through membership, they have indicated interest in providing high quality end-of-life nursing care. Criteria for inclusion were; current HPNA membership, RN, listed "hospice" or "palliative care" as their primary practice, and gave permission to be contacted by other organizations.

Measures

The questionnaire was developed for this study by the investigator, based on the results of a qualitative study of hospice staff perceptions about preparing families for dying⁸. The questionnaire was reviewed by an expert panel for content validity. The final version contains 23 questions (appendix A) and takes approximately 15–20 minutes to complete.

Procedure

The [redacted for peer review] was used as a neutral third party for survey administration. Questionnaires were mailed to 1537 hospice RNs and postcards to 1169 palliative care RNs. From the 8500 HPNA members at the time, 2706 met the inclusion criteria and were contacted. Mailed surveys were used for the hospice nurses because only postal addresses could be obtained from HPNA. After a number of nurses asked about on-line availability of the survey, palliative care nurses were sent postcards with the option of receiving the survey via mail (n=920) or online (n=249) via Qualtrics Survey Hosting Service. Two weeks after distribution of the questionnaires, a reminder was sent. Four weeks after the initial distribution, the survey was distributed a second time.

All of the surveys received from HNs were paper and Cardiff TeleForms was used to scan and extract data from completed, returned surveys. With the first 20 returned surveys, scanning and data extracting tests were performed to assure that there was 100% reliability between the original document and the extracted data.

For the palliative care RNs, data was collected directly from Qualtrics and reported in SPSS format or paper copies of the survey were entered into Qualtrics by a research assistant. To assure reliability, 10% of the surveys were compared to the data entered in Qualtrics. There was 99.0% reliability between the paper surveys and the database and all errors were corrected when found.

Statistical analysis

Data were analyzed using SPSS 20.0 (IBM). Frequencies were analyzed in the original Likert scales. Data concerning tailoring were dichotomous and comparisons between groups were calculated using Pearson χ^2 . Ordinal logistic regression was used to explore the likelihood that nurses beliefs and practices could be predicted by certification status (CHPN certified versus not CHPN certified) or patient population served (hospice versus palliative care). Ordinal regression was chosen because the independent variables (certification status and patient population) were dichotomous and the dependent variable (nurse response on a Likert scale) is ordinal. Multi-collinearity was evaluated by examination of tolerance and variance inflation factor (VIF). All tolerance values were greater than 0.1 (range .996–.998) and the VIF was less than 10 (range 1.002–4) indicating there is no problem with multi-collinearity in the data.

Results

Surveys were sent to 2706 nurses, 1537 HNs and 1169 PCNs. Completed responses were received from 1434 (53.0%) nurses, 880 HNs (61.4%) and 554 PCNs (38.6%). All of the participants resided in the US. The demographics of HNs versus PCNs were similar except for the location of the employer, certification in another specialty and education (Table 1). The mean age was 48.3 (SD 10.75) with no difference between HNs (mean, 48.2, SD 10.74) versus PCNs (mean, 48.5, SD 10.78). PCNs had more nurses with higher degrees (61.4% Master's degree) than HNs (15.2% Master's degree). Because of the difference in education between HNs and PCNs, binary logistic regression analysis was conducted and

determined that education (diploma, associate's, bachelor's or master's degree) did not significantly predict preparatory practices. Similarly, there were no significant differences in outcomes based on nurses' primary role (clinical, education or administration). Certified Hospice and Palliative RNs (CHPNs) had significantly more experience in hospice and palliative nursing than non-CHPNs ($\chi^2 = 181.05$, $df = 7$, $p = 0.000$) but there were no other significant differences by certification status. Demographics were similar to the HPNA membership demographics in terms of gender (HPNA members = 95% female) and ethnicity (87% White, 5% Black, 3% Hispanic), with a higher percentage of CHPN respondents (61.5%) than the 41% of certified HPNA members. Twenty-three percent of HPNA members hold a Master's degree or higher in nursing²⁵.

Nurses' beliefs about family preparation

The assumption of proportional odds was met for the questions regarding nurses' beliefs about family preparation and the strategies used for preparation, as assessed by a full likelihood ratio test comparing the residual of the fitted location mode to a model with varying location parameters. A vast majority of nurses agreed that most family members can be prepared for physical changes that occur (98.4%), and what the family will need to do (95.4%) in the last hours (Table 2). Fewer nurses agreed that family can be prepared for the patient's death (86.2%) with HNs significantly less likely to agree than PCNs. While most nurses (84.8%) believe family can be prepared for emotional changes at the time of death, only 26.6% totally agree with 58.2% somewhat agreeing. PCNs are significantly more likely to believe that families can only be prepared if they want to be prepared, although for both this statement had the lowest overall agreement (78.9%). There were no significant differences in beliefs by certification status.

Strategies used to prepare families

Engendering family trust in the nurse (94.8% critically or very important) and timing of the preparation in relation to the course of the patient's illness (91.1% critically or very important) were the most important strategies overall (Table 3). HNs thought it was significantly more important than PCNs to use repetition of messages (OR .73, $p = .003$) and consult with other disciplines (OR .53, $p = .000$). There were no significant differences by certification status.

Tailoring

Most nurses tailor the delivery (96.4%) and/or content (76.4%) of their preparatory messages. Significantly more PCNs (80.7%) than HNs (73.8%) report tailoring of content ($\chi^2 = 9.094$, $p = .003$) but there is no difference regarding delivery. Tailoring is based on family- and patient-factors (Table 4). The most frequently reported factors for tailoring are the family's cultural background (85.9%), how much they want to know (85.8%), perceived education (83.9%) and the patient's signs and symptoms (s/sx) (84.0%). PCNs based tailoring on previous caregiving experience ($\chi^2 = 5.36$, $p = .021$), cultural/ethnic background ($\chi^2 = 4.13$, $p = .042$), and what family members ask about ($\chi^2 = 7.98$, $p = .005$) more frequently. HNs more frequently used patient s/sx to tailor messages ($\chi^2 = 5.01$, $p = .025$). CHPNs more frequently tailor based on perceived education ($\chi^2 = 5.97$, $p = .015$), patient diagnosis ($\chi^2 = 11.301$, $p = .001$) and prognosis ($\chi^2 = 16.39$, $p = .000$) than non-CHPNs.

Timing

The greatest differences based on the patient population were related to the timing of preparation. HNs were much more likely than PCNs to begin preparation for both death and caregiving at admission ($\chi^2 = 268.02$, $p = .000$, and $\chi^2 = 80.30$, $p = .000$ respectively) or when medications change ($\chi^2 = 39.02$, $p = .000$ and $\chi^2 = 28.73$, $p = .000$). PCNs were more likely to begin preparation for death when the patient's condition changed ($\chi^2 = 8.18$, $p = .004$). Most nurses give the preparatory information over time (72.5%) rather than all at once regardless of certification status or patient population.

Content

The content of the preparatory information consisted of the s/sx that commonly occur in the final days. The data indicated that the proportional odds assumption, which must be met for ordinal logistic regression to be accurate was violated for most of the s/sx. In these cases, whether or not the difference is significant gives an indication of the relationship between the covariates (certification status or population) and the discussion rates for symptoms, but the nature of the association may be better described by multiple binary logistic regressions (25). Both tests were performed.

Nurses reported whether they discussed a symptom with almost every patient (>80%), most patients (50–79%), some patients (20–49%), few patients (1–19%) or if they never discussed it. The signs and symptoms that most nurses addressed with more than half of the patients included breathing pattern changes (96.3%), decreased fluid intake (95.5%), audible secretions (93.9%), overall decline (91.0%) and decreased socialization (90.0%). There were significant differences based on patient population in how often nurses discussed various symptoms. HNs discussed bedbound state, decreased fluid intake, dysphagia, emotional changes, incontinence, increased temperature, increased sleeping, mottling, overall decline, sensory changes, skin changes, unusual communication, urine output changes, visions and vital sign changes significantly more often than PCNs. PCNs were more likely to discuss audible respiratory secretions, decreased food intake, and mandibular breathing than HNs. The only significant difference based on certification status was that non-CHPNs were more likely to discuss vital sign changes (OR 1.28, 95% CI 1.02–1.60, $p = .030$).

Discussion

Most nurses believe families can be prepared for the patient's physical changes in the final hours and for caregiving tasks in the final days. Engendering trust and repetition were identified as important strategies in preparing families. Most nurses tailor the delivery and content of their preparation to family factors such as the cultural background, perceived educational level, and what families want to know. The patient's s/sx also affect the tailoring of the message.

There are significant differences by patient population in beliefs about preparing family, strategies, tailoring, timing and content. The differences by patient population may be related to differences in the length of stay, and the family role in these populations. PCNs were more likely to work in a hospital ($p = 0.00$) and therefore to see patients for shorter

length. Families know upon admission to hospice that the plan is for end-of-life care, which may account for more HNs believing that family members can be prepared for death. Because HNs are seeing families intermittently, over time, HNs may value repetition more than nurses in an inpatient environment where nurses are constantly present over a relatively short stay. The interdisciplinary structure of hospice may also explain why HNs place a higher importance on consulting other disciplines. The differences in content and timing of preparation may also be explained by differences in the length of stay and the family role in hospice versus palliative care.

The differences in preparation related to certification status were primarily related to elements of tailoring with CHPNs more likely to tailor messages on perceived family education level, patient diagnosis and anticipated time to death, indicating more dimensions of tailoring used by CHPNs. The results failed to show other significant differences between CHPNs and those without this certification. Furthermore, CHPNs had significantly more experience in HPN than non-CHPNs ($\chi^2=181.05$, $p=.000$), which may account for some of the difference in practice.

Limitations to the study include potential sampling bias and statistical error. This survey was limited to HPNA members and does not represent the beliefs or practices of non-members. The total number of nurses who provide care for hospice or palliative care patients is unknown, making it impossible to determine the proportion of certified to non-certified nurses or the number of HPNA members to non-members. It was also not known if non-CHPNs had been certified in the past, which might be a confounding factor. Nurses self-reported, which introduces the possibility of recall bias and social desirability bias. Also, with the number of analyses conducted, there is a risk of increased Type I error. Since this was an exploratory study designed to stimulate further research, the Type I error rate was not controlled.

The results of this study have implications for researchers, clinicians and the future of hospice and palliative nursing. The multiple differences revealed in the practices of HNs and PCNs raises questions about whether the knowledge and skills needed with these two populations remain essentially the same. Indeed, there has been much effort recently to clarify the difference between hospice and palliative care with it being made clear to the public that “receiving palliative care does not necessarily mean you are dying”²⁶. As the nursing care for these populations becomes more clearly defined, the knowledge, skills and practices of the two groups should be re-examined to determine if they have drifted and if modifications need to be made for education and certification. These results do indicate a difference in tailoring based on certification status, but it is not clear whether the differences in practice is due to the process of obtaining certification changing how a nurse practices or if nurses who pursue certification worked differently all along²⁷. Much more research is needed examining patient outcomes in related to certification, especially in hospice and palliative nursing.

Conclusions

This study provides information about the beliefs, practices and strategies of hospice and palliative care nurses regarding family preparation for the end of life, and how they are related to the patient population and the nurses' certification status. This information about how nurses prepare families can be used, along with what is known about family preparatory needs to develop interventions that are tailored to patient and family characteristics. As the specialty of hospice and palliative nursing matures, it is important to revisit the practice of nurses with both populations to assure that adequate education and proper criteria for certification are provided for all hospice and palliative care nurses.

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Table 1

Demographics of hospice and palliative care nurse participants

	Population			Certification	
	Total N=1434 (100 %)	Hospice n=880 (61.4%)	Palliative care n=554 (38.6 %)	CHPN n=882 (61.5%)*	Not CHPN n=525 (36.6%)*
Gender					
Female	1308 (91.2)	808 (91.8)	500 (90.3)	818 (92.7)	471 (89.7)
Male	82 (5.7)	51 (5.8)	31 (5.6)	42 (4.8)	36 (6.9)
Missing	44 (3.4)	21 (2.4)	23 (4.2)	22 (2.5)	18 (3.4)
Race					
White (Caucasian)	1313 (91.6)	819 (93.1)	494 (89.2)	827 (93.8)	465 (88.6)
Black	61 (4.3)	38 (4.3)	23 (4.2)	30 (3.4)	30 (5.7)
Non-white	72 (5.0)	45 (5.1)	27 (4.9)	40 (4.5)	44 (8.3)
Hispanic	40 (2.8)	21 (2.4)	19 (3.4)	23 (2.6)	17 (3.2)
Total number of years in HPN					
0-5	518 (36.1)	314 (35.7)	204 (36.8)	228 (25.9)	283 (53.9)
6-10	394 (27.5)	236 (26.8)	158 (28.5)	277 (31.4)	109 (20.8)
11-20	381 (26.6)	210 (23.9)	131 (23.7)	285 (32.3)	91 (17.3)
21-30	111 (7.7)	67 (7.4)	44 (7.9)	81 (9.2)	29 (5.5)
>30	10 (.7)	4 (.5)	6 (1.1)	7 (.8)	3 (0.6)
Missing	20 (1.4)	9 (1.0)	11 (2.0)	4 (.5)	10 (1.9)
Hospice and palliative care certified	882 (61.5)	553 (62.8)	329 (59.4)		
Not certified	525 (36.6)	300 (34.1)	225 (40.6)		
Missing	27 (1.9)	27 (3.1)			
Type of practice [†]					
Clinical	1057 (73.7)	627 (71.3)	430 (77.6)	645 (73.1)	394 (75.1)
Administrative	233 (16.3)	201 (22.8)	32 (5.8)	151 (17.1)	79 (15.1)
Educational/Research/Other	156 (10.9)	134 (15.2)	22 (4.0)	111 (12.6)	41 (7.8)
Highest education in nursing					
Associate's degree	364 (25.4)	315 (35.8)	49 (8.9)	224 (25.4)	134 (25.5)

	Population				Certification	
	Total N=1434 (100 %)	Hospice n=880 (61.4%)	Palliative care n=554 (38.6 %)	CHPN n=882 (61.5%)*	Not CHPN n=525 (36.6%)*	
Diploma	116 (8.1)	94 (10.7)	22 (4.0)	81 (9.2)	32 (6.7)	
Bachelor's degree	446 (31.1)	314 (35.7)	132 (23.8)	273 (31.0)	163 (31.1)	
Master's degree	451 (31.5)	111 (12.6)	340 (61.4)	280 (61.8)	167 (31.8)	
Clinical doctorate (DNP)	12 (.8)	12 (1.4)	0	7 (.8)	4 (.8)	
Doctorate (PhD or DNSe)	11 (.8)	11 (1.3)	0	6 (.7)	5 (1.0)	
Missing	34 (2.4)	23 (2.6)	11 (2.0)	11 (1.2)	20 (3.8)	

* 27 respondents (1.88%) did not give information on their CHPN status which caused the totals from the CHPN and not CHPN to fall short of the total response.

† Some respondents chose more than one type of practice.

Table 2

Nurses' beliefs concerning whether family members can be prepared with significant differences between groups.

		Totally agree	Agree somewhat	Neither agree or disagree	Disagree somewhat	Totally disagree	Missing	OR	p value
Most or all family members can be prepared for the person's death		501 (34.9)	735 (51.3)	51 (3.6)	115 (8.0)	24 (1.7)	8 (6)		
Population	H	329 (37.4)	443 (50.3)	28 (3.2)	60 (6.8)	13 (1.5)	7 (8)		
	PC	172 (31.0)	292 (52.7)	23 (4.2)	55 (9.9)	11 (2.0)	1 (2)	.74	.004
Certification	CHPN	318 (36.1)	444 (50.3)	31 (3.5)	68 (7.7)	14 (1.6)	7 (8)		
	Non-CHPN	171 (32.6)	279 (53.1)	20 (3.8)	44 (8.4)	10 (1.9)	1 (2)		
You can prepare family for the physical changes that occur in the last hours		890 (62.1)	520 (36.3)	5 (.3)	8 (6)	4 (.3)	7 (.5)		
Population	H	535 (60.8)	327 (37.2)	2 (.2)	6 (.7)	3 (.3)	7 (.8)		
	PC	355 (64.1)	193 (34.8)	3 (.5)	2 (.4)	1 (.2)	0		
Certification	CHPN	548 (62.1)	326 (37.0)	2 (.2)	2 (.2)	1 (.1)	3 (.3)		
	Non-CHPN	323 (61.5)	187 (35.6)	3 (.6)	6 (1.1)	3 (.6)	3 (.6)		
You can prepare family members for what they will need to do in the last hours		733 (51.1)	635 (44.3)	35 (2.4)	14 (1.0)	3 (.2)	14 (1.0)		
Population	H	469 (53.3)	370 (42.0)	18 (2.0)	10 (1.1)	2 (.2)	11 (1.3)		
	PC	264 (47.7)	265 (47.8)	17 (3.1)	4 (.7)	1 (.2)	3 (.5)		
Certification	CHPN	463 (52.5)	385 (43.7)	17 (1.9)	6 (.7)	1 (.1)	10 (1.1)		
	Non-CHPN	256 (48.8)	240 (45.7)	16 (3.0)	8 (1.5)	2 (.4)	3 (.6)		
You can prepare family members for the emotional changes at the time of death		381 (26.6)	835 (58.2)	83 (5.8)	104 (7.3)	13 (.9)	18 (1.3)		
Population	H	226 (25.7)	512 (58.2)	54 (6.1)	65 (7.4)	9 (1.0)	14 (1.6)		
	PC	155 (28.0)	323 (58.3)	29 (5.2)	39 (7.0)	4 (.7)	4 (.7)		
Certification	CHPN	234 (26.5)	521 (59.1)	51 (5.8)	59 (6.7)	8 (.9)	9 (1.0)		
	Non-CHPN	137 (26.1)	301 (57.3)	31 (5.9)	43 (8.2)	5 (1.0)	8 (1.5)		
Family members can only be prepared for death if they want to be prepared		571 (39.8)	560 (39.1)	115 (8.0)	144 (10.0)	33 (2.3)	11 (.8)		
Population	H	365 (64.0)	34 (6.0)	62 (10.9)	79 (13.9)	21 (3.7)	9 (1.6)		
	PC	206 (37.2)	216 (39.0)	53 (9.6)	65 (11.7)	12 (2.2)	2 (.4)	.80	.032
Certification	CHPN	339 (38.4)	355 (40.2)	69 (7.8)	93 (10.5)	21 (2.4)	5 (.6)		

	Totally agree	Agree somewhat	Neither agree or disagree	Disagree somewhat	Totally disagree	Missing	OR	p value
Non-CHPN	219 (41.7)	195 (37.1)	45 (8.6)	49 (9.3)	12 (2.3)	5 (1.0)		

Table 3

Ordinal logistic regression of nurses' strategies for preparing families by population and certification status

		Critically important	Very important	Somewhat important	A little important	Not important	Missing	OR	p value
Repetition of preparatory messages		534 (37.2)	653 (45.5)	173 (12.1)	25 (1.7)	9 (.6)	40 (2.8)		
Population	H	357 (40.6)	385 (43.8)	98 (11.1)	15 (1.7)	3 (.3)	22 (2.5)		
	PC	177 (31.9)	268 (48.4)	75 (13.5)	10 (1.8)	6 (1.1)	18 (3.2)	.73	.003
Certification	CHPN	346 (39.2)	390 (44.2)	107 (12.1)	14 (1.6)	4 (.5)	21 (2.4)		
	Non-CHPN	176 (33.5)	253 (48.2)	64 (12.2)	11 (2.1)	5 (1.0)	16 (3.0)		
Giving information incrementally		320 (22.3)	784 (54.7)	268 (18.7)	24 (1.7)	1 (.1)	37 (2.6)		
Population	H	204 (23.2)	474 (53.9)	163 (18.5)	15 (1.7)	1 (.1)	23 (2.6)		
	PC	116 (20.9)	310 (56.0)	105 (19.0)	9 (1.6)	0	14 (2.5)		
Certification	CHPN	199 (22.6)	480 (54.4)	168 (19.0)	17 (1.9)	1 (.1)	17 (1.9)		
	Non-CHPN	114 (21.7)	295 (56.2)	93 (17.7)	7 (1.3)	0	16 (3.0)		
Family trust in the nurse		892 (62.2)	467 (32.6)	51 (3.6)	4 (0.3)	0	20 (1.4)		
Population	H	552 (62.7)	274 (31.1)	38 (4.3)	3 (0.3)	0	13 (1.5)		
	PC	340 (61.4)	193 (34.8)	13 (2.3)	1 (0.2)	0	7 (1.3)		
Certification	CHPN	544 (61.7)	291 (33.0)	37 (4.2)	3 (0.3)	0	7 (.8)		
	Non-CHPN	333 (63.4)	166 (31.6)	13 (2.5)	1 (0.2)	0	12 (2.3)		
Consulting other disciplines		473 (33.0)	652 (45.5)	231 (16.1)	44 (3.1)	9 (.6)	25 (1.7)		
Population	H	338 (38.4)	383 (43.5)	124 (14.1)	16 (1.8)	4 (.5)	15 (1.7)		
	PC	135 (24.4)	269 (48.6)	107 (19.3)	28 (5.1)	5 (.9)	10 (1.8)	.53	.000
Certification	CHPN	287 (32.5)	414 (46.9)	139 (15.8)	24 (2.7)	5 (.6)	13 (1.5)		
	Non-CHPN	176 (33.5)	226 (43.0)	88 (16.8)	19 (3.6)	4 (.8)	12 (2.3)		

Table 4
Frequencies and significant differences of tailoring and timing factors for nurses' preparation of families

Question	Overall freq (%) ^a	HNs	PCNs	χ^2 value	p value	CHPN	Non-CHPN	χ^2 value	p value
Elements of tailoring									
Family factors									
Perceived education level	1203 (83.9)	743 (84.4)	460 (83.0)			756 (85.7)	424 (80.8)	5.97	.015
Health care professional?	744 (51.9)	473 (53.8)	271 (48.9)			477 (54.1)	257 (49.0)		
Experience in caregiving for a dying person?	1000 (69.7)	616 (70.0)	384 (69.3)			622 (70.5)	362 (69.0)		
Caregiving experience?	768 (53.6)	450 (51.1)	318 (57.4)	5.36	.021	483 (54.8)	277 (52.8)		
Cultural/ethnic background	1232 (85.9)	743 (84.4)	489 (88.3)	4.13	.042	765 (86.7)	446 (85.0)		
Spiritual beliefs or religious practices	1173 (81.8)	711 (80.8)	462 (83.4)			726 (82.3)	424 (80.8)		
How much they want to know	1230 (85.8)	743 (84.4)	487 (87.9)			769 (87.2)	442 (84.2)		
What they ask about	1002 (69.9)	591 (67.2)	411 (74.2)	7.98	.005	627 (71.1)	357 (68.0)		
Signs and symptoms	1204 (84.0)	754 (85.7)	450 (81.2)	5.01	.025	753 (85.4)	428 (81.5)		
Diagnosis	913 (63.7)	570 (64.8)	343 (61.9)			591 (67.0)	305 (58.1)	11.30	.001
Prognosis (anticipated time to death)	1052 (73.4)	658 (74.8)	394 (71.1)			680 (77.1)	353 (67.2)	16.39	.000
Timing of preparation									
Begin preparation for death									
At admission	1046 (72.9)	776 (88.2)	270 (48.7)	268.02	.000	641 (72.7)	380 (72.4)		
When condition changes	1050 (73.2)	621 (70.6)	429 (77.4)	8.18	.004	650 (73.7)	381 (72.6)		
When medications change	565 (39.4)	403 (45.8)	162 (29.2)	39.02	.000	356 (40.4)	197 (37.5)		
Begin preparation for caregiving near death									
At admission	716 (49.9)	522 (59.3)	194 (35.0)	80.30	.000	427 (48.4)	271 (51.6)		
When the patient's condition changes	1150 (80.2)	714 (81.1)	436 (78.7)			719 (81.5)	411 (78.3)		
When medications change	538 (37.5)	378 (43.0)	160 (28.9)	28.73	.000	335 (38.0)	192 (36.6)		