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Translating Evidence into Practice at the End-of-Life: Information needs, access and usage by hospice and palliative nurses

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Abstract

Information literacy is important for evidence-based nursing and quality patient care. Hospice/palliative nurses are often unaffiliated with academic institutions and may experience barriers accessing information. The project's goals were to identify their (1) access to evidence-based resources, (2) information literacy skills and (3) training needs. The research design was a descriptive assessment. Members of the Hospice & Palliative Nurses Association in 4 states received the assessment in collaboration with University of Pittsburgh. The methodology yielded statistics on information needs, access and literacy skills. Data analysis included frequency distributions, cross-tabulations, and a chi-square test. Of the respondents, 69% worked clinically. The need for drug or disease information occurred in 89% to 100% of respondents across sites. Respondents knew of PubMed in 28% to 70% of sites. Evidence databases were unavailable in 7% to 39% of settings. The most frequent source of information was colleagues (74%), followed by Internet searches (70%). About 43% of respondents felt confident using health literacy strategies. The greatest training needs were finding quality nursing information (79%), reliable patient education (65%) and evidence for practice/quality improvement (64%). There is a large need for quality nursing, patient and evidence-based information in hospice environments. Hospice nurses access the Internet, although evidence/database access is often lacking or unknown making it suboptimal.

Being able to recognize information needs, locate evidence-based knowledge, critically appraise the retrieval and apply it in practice is vital to nurses. Hospice and palliative nurses often work in settings unaffiliated with hospitals or academic medical centers and may experience barriers to accessing information. Over half of hospice care is provided by free-standing, independent hospice agencies while another 22% is provided by home health agencies or nursing homes.¹ Importantly only 20% of hospice agencies are part of a hospital system, leaving most staff reliant upon their own agency or the Internet for knowledge-based information resources.¹ Hospice home care nurses and hospices are frequently located in the community; community-based health professionals and their agencies may experience low access to information resources and be exposed to fewer training opportunities in information-seeking behaviors. Yet, research dissemination and implementation in hospice environments is essential for translating evidence into practice.

There is no current study on information literacy and information retrieval training needs of hospice/palliative care nurses in the United States. In terms of information usage by U.S. staff delivering hospice or palliative care, existing studies are limited. This U. S.-focused study sought to determine the current level of information literacy skills among hospice nurses, barriers to information dissemination and if further training was needed.

Background

To promote the skills to find and use evidence, nursing information literacy competencies are promulgated by several groups (ACRL,² ANA³, TIGER⁴). The set of skills included in information literacy, which the Technology Information Guiding Education Reform (TIGER) competency defined as the ability to: “Identify information needed for a specific purpose, locate pertinent information, evaluate the information and apply it correctly”⁴, (pp 9) goes beyond the issue of access alone. The assessment instrument for the present study included some TIGER-specific focus questions. Five Information Literacy Competencies for practicing nurses and graduating nursing students include the ability to:

- a. Determine the nature and extent of the information needed
- b. Access needed information effectively and efficiently
- c. Critically evaluate the procured information and its sources
- d. Individually, or as a member of a group, use information effectively to accomplish a specific purpose
- e. Use information ethically and legally²⁻⁴

These Information Literacy Competencies are considered essential for non-informatics nurses. Many nurses in practice today graduated from programs before the ability to search, appraise and apply information for evidence became a standard. These nurses may benefit from information literacy continuing education and determining this was also part of the assessment.

Information literacy is increasingly important for evidence-based nursing practice and quality patient care. Recent concerns about the gap between the extant evidence base and variable implementation of palliative care practices question the cause of this.⁵ How nursing science is retrieved and translated into hospice/palliative nursing practice and unit policy is uncertain and was assessed by this study.

Study Objectives

The study's primary goals were to identify nurses' (1) current information needs and access to evidence-based practice resources, (2) skill levels in information literacy and (3) training needs.

Methods

Design

The study's design was a descriptive assessment in online or paper form incorporating many questions from validated instruments with permission from the publisher or authors. Information literacy is a crucial step on the path to health literacy. A 2012 report by the Institute of Medicine, *Attributes of a Health Literate Organization*, listed 10 hallmark attributes.⁶ (pp 4) Ranking second was “integrates health literacy into planning, evaluation measures, patient safety and quality improvement”. Conducting a health literacy organizational assessment and factoring health literacy into patient safety plans were two examples of how to accomplish this. A first step was the assessment of the nursing staff's information literacy as an essential precursor to health literacy and quality improvement. The assessment instrument also included some questions on staff's use of materials suited to low health literacy patients and usage of health literacy techniques to consider the extent to which they display attributes of a health-literate organization or needed training.

Instrument

Almost all of the questions were either from a previously validated nursing scale or had minor changes from their validated questions to conform to the hospice/palliative care specialty. These include the Information Literacy for Evidence-Based Nursing Practice by Pravikoff et al used with permission⁷ and the Perceptions of Nurses of Evidence-based Practice (EBP) questionnaire by Majid et al which was made freely available for educational use by the author and the Medical Library Association at publication.⁸ In areas where the assessment is new, it inquires about specific skills recommended in the TIGER Informatics Competencies for nurses and the use of health literacy strategies recommended by the Institute of Medicine.

The instrument includes a mix of dichotomous responses (Y/N), rating scales, multiple choice and Likert-type responses. A few questions are open-ended. The assessment instrument was piloted with four nurses working in a variety of settings (3 hospice/palliative care-related, 1 academic nurse practitioner) before distribution to HPNA members within the four states of Pennsylvania, New York, New Jersey and Delaware.

Upon completion, the assessment was recomposed into a format compatible with Lime Survey software, an open source survey application.

Sample and distribution—All current members of the Hospice & Palliative Nurses Association located in the four states (n=609) received the assessment in collaboration with the University of Pittsburgh (Pitt) Health Sciences Library System. The instrument itself was mailed out to participants in these four states of the Middle Atlantic Region of the National Network of Libraries of Medicine (NN/LM) using an address list obtained through HPNA. Online responses were encouraged and a printed, mailed instrument was also accepted.

Analytic Approach—The exploratory study methodology yielded descriptive statistics on information needs, access and literacy skills. Assisted by Pitt's Clinical and Translational Science Institute (CTSI), through its Design, Biostatistics and Epidemiology (DBE) Core,

data analysis included the frequency distribution of the assessment items, cross-tabulation of responses, and a chi-square test using SAS (SAS Institute) version 9.2.

Data analysis began by examining the frequency distribution of the assessment items. The distribution of responses to the assessment items were compared across key professional and demographic characteristics. A cross-tabulation of the assessment responses with a given professional and demographic characteristic (e. g., work setting) were generated and a chi-square test examined the null hypothesis that the distribution of assessment responses is equal across the categories of the profession and demographic characteristic (versus the alternative hypothesis that they are not equal) for the most important items.

The methodology assessed U.S. homecare and hospice staff to determine their information use, sources and critical appraise skills. This information literacy assessment for this population was the first to determine their ability to find and translate information into knowledge. The project was submitted to and received Pitt's Institutional Review Board (IRB) approval.

Results

Of the 609 mailed instruments, six returned forms were inadmissible and 188 usable responses were received for a response rate of 31%.

Demographics showed that including Nurse Managers, 69% of the responders had clinical roles, 11.4% were administrative, 17% were in education and .02% performed research. This gave a large base with practical clinical roles on which to assess their information needs along with non-clinical knowledge needs.

Respondents worked in a variety of settings: non-profit hospice (44%), for-profit hospice (10%), home hospice (14%), long term care/nursing home (10%), rehabilitation center (3%), hospital (29%) and university (9%). Some worked in multiple settings, but over 80% spent time outside of the hospital or university environment.

Information needs and use

Table 1 depicts reasons for information need and percentages needing that information in a variety of hospice/palliative care settings. Information needs for drug or disease information occurred in 89%-100% of hospices (non-profit and for-profit), home hospice, long term care and hospitals. Table 2 presents the frequency of information need for nursing roles versus patient education across settings. The majority needed information 2-3 times a week to support their nursing responsibilities. By education, information was needed 1-3 times a week by 70% of master's-prepared nurses, 68% of Bachelors-prepared nurses, 75% of Associate-degree nurses and 72% of diploma nurses. The most frequent source of information was colleagues (74%), followed by Internet web searches (70%), nursing website searches (34%), print journals (27%) and PubMed (21%).

Access to Evidence

As shown in Table 3, access to electronic databases varied widely across work settings. Respondents knew PubMed was available in 28%-70% of these sites. PubMed or other databases were not available in 7%-39% of settings. In addition, respondents in up to 24% of hospices were unsure if evidence databases were available to them in their facility. If access was provided to any sort of electronic resource, most respondents used them at work.

Skills and knowledge of database searching

Databases search operators (Boolean logic, subject heads, limits/filters) were used infrequently (Table 4). Almost two-thirds of the respondents (over 60%) never used Boolean operators or subject headings in searches. Filtering by date or other limits was somewhat more familiar.

Critical appraisal skills

The instrument included a current assessment of U.S. hospice and homecare staffs' ability to critically appraise the quality of the information located. About two-thirds felt confident or very confident in appraising nursing information (60.6%), with half confident in the evaluating patient information (52.8%). Still fewer felt confident in judging the reliability of the sources they used (48.6%) or their statistical significance (30.5%).

Health Literacy Strategies Use

Information literacy is a crucial step on the path to health literacy. The Institute of Medicine defines health literacy as, "the degree to which individuals can obtain, process, and understand the basic health information...they need to make appropriate health decisions".^{9(pp 1)} Healthcare professionals providing information to patients are part of the process. In this study, only 6.7% of nurses often or very frequently sought information from low health literacy/easy to understand sources for their patients. About 43% of respondents felt confident in using health literacy strategies such as Teach-Back or Show Me to confirm patients' understanding of educational materials.

Training Needs

The greatest training needs were to find Internet-based quality nursing information (79%) and free, reliable patient information (65%). Training to identifying clinical questions for evidence-based practice and quality improvement also ranked high (64%) among needs. Other training needs among the top 5 included learning how to evaluate the quality of Internet information (48%) and conduct literature/databases searches (41%). These needs were rated as Important-Very Important. Training to better locate and appraise evidence ranked high among needs, and many nurses lacked confidence using health literacy strategies.

Barriers to seeking and using information

Not surprisingly, 83% of nurses lacked time at work to search for or read articles. Almost half noted insufficient time at work to implement practice changes. Yet nurses appreciated the importance of research evidence in practice with only 6.6% saying it lacked value.

Limitations: Compared with other hospice nurses, HPNA members may be more professionally oriented, likely to be certified and higher educated. The population responding had a higher percentage of advanced degrees and certification than HPNA nurses in general. Also, this data represents 4 states. Overall or in other states, needs and access may vary.

Statistical significance

Statistical significance was calculated and found for the cross tabulation of information need (question 3) and information seeking (question 8). Statistical significance was set at a P value less than 0.05 ($p < .05$). Many of the variables within information need were significantly associated with seeking sources for utilizing evidence-based information in the work setting. Most notably, one of most significant findings was for accessing PubMed to utilize research finding in the work setting ($p = 0.002$). Other significant associations were found for disease and complication information being searched on the Internet; peers as the source of cultural information and using listserv forums for many nursing information needs. Other significant findings were noted as well.

Significance was also calculated for years of experience and type of information needed. A correlation was found with information needed to write a clinical policy, patient safety, quality improvement or evidence-based practice.

Discussion

An earlier study on information literacy and training needs of hospice/palliative care personnel focused on homecare and hospice staff during 1999 and provides some limited understanding of their information needs. In this questionnaire of nurses, managers, and financial personnel, computers were primarily used for email.¹⁰ As with the present study, when the Internet was accessed, respondents searched for medical and disease information most frequently, with patient education and research ranking third and fourth, respectively. Unlike the present study, no information was given regarding their choice of sources, database subscriptions, search strategies or appraisal of the content.

A recent study of 16 hospices in the U.S. Midwest found areas for improvement in translating evidence-based practice into actual care.¹¹ This coincides with a Connecticut study that found home care nurses may not be sufficiently knowledgeable about current evidence for managing heart failure.¹²

Studies from other countries support the need for access to the professional literature and interest in training among the hospice nursing population. An information needs assessment from a specialist palliative and gerontology center in Midwest Ireland, which included a hospice, found that three-quarters of the respondents did not have access to any subscription-based online databases.¹³ Of those who named a specific database to acquire, 69% suggested CINAHL and 46% named MEDLINE. Of the respondents, 87% wanted training in searching in online databases to find information. Only 19% of the respondents were nurses or care staff, which still left nursing needs ill-defined. In Canada, a study of 12 residential hospice nurses' learning needs identified colleagues (physicians, other nurse) as

the most frequent source of pain and symptom management advice. Other sources consulted less frequently were published papers, textbooks and practice guidelines.¹⁴ In 2000, information needs analysis to inform the development of a specialist palliative care/cancer library at the Marie Curie Centre in England found the staff well aware they needed to apply evidence-based care, update skills and stay current with new knowledge.¹⁵ This is reinforced by an international assessment of hospice/palliative care healthcare professionals in which 30% of the responders were nurses. Many of the respondents noted they applied information from the Internet in their clinical work.¹⁶ These existing non-U.S. studies reinforce that hospice nurses lack access to databases, appreciate the value of knowledge-based evidence, and would welcome training which is similar to the findings of the present study.

The wide range of responses to the access question in this study may reflect the range of practice environments of hospice/palliative care from private homes, to free-standing hospices to university-based palliative care teams. Yet, this study suggests that the gap between distribution of information (dissemination) and implementation by the actual use of evidence-based interventions may be related to the limited access to knowledge-based resources in a large percentage of hospice/palliative care environments.

Implications for practice

In HPNA's Position Statement on EBP (2012), the association highlighted that organizations employing hospice and palliative nurses need the “necessary infrastructure to support evidence-based practice”.^{17(pp2)} Opportunities for practice-based use of evidence might be during quality assessment and performance improvement.

In 2011, approximately 1.65 million patients received care from hospice organizations in America.¹ The Centers for Medicare & Medicaid Services (CMS) will be requiring hospices to gather data and report on quality measures. One of those will be a structural measure evaluating whether the hospice has a quality assessment and performance improvement program in place. In order to implement “best practices”, hospices need to be able to search for and find the evidence that undergirds quality care and the research that identifies new advances in that care. Information access, searching proficiency, and critical appraisal of the retrieval will be core to any quality improvement endeavors.

Ensuring patient education programs or practices use health-literacy tactics such as Show me and Teach Back will help promulgate the attributes defined for health literate organizations.

Including references to the literature in unit-based policies and procedures will bring evidence to the point of care. It also would foster data-based decision-making when patient care questions arise.

Conclusion

There is a large need for quality nursing, patient and evidence-based information in U.S. hospice environments. Access to information varies by work setting. Hospice nurses located in the community often have limited access to evidence. Hospice nurses have access to the

Internet at work and some search for information, although evidence/database access is often lacking or unknown making it suboptimal.

Organizational support for information access, nursing literature resources and in-service training could enhance the availability of evidence for patient care and family support. Enhancing knowledge dissemination could reduce the gap to evidence implementation and help meet Performance Improvement requirements.

The Institute of Medicine has set this goal: “By the year 2020, 90 percent of clinical decisions will be supported by accurate, timely, and up-to-date clinical information, and will reflect the best available evidence.”¹⁸ To capably translate evidence into practice in hospice and palliative care settings, nurses need better access, search skills and information literacy competencies.

Evidence becomes a resource for informed decision-making. Despite the barrier of time, nurses do value research evidence in practice. Given the frequency of information need, training could increase nurses' use of evidence-based information in hospice/palliative care practice.

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Dr. Diane Pravikoff allowed use of instrument questions and the Medical Library Association offers use of the Majid documents.

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Table 1
Percentage Needing Information & Top Reasons across Sites

Reason	Non Profit/For Profit Hospice	Home Hospice	Long Term Care or Nursing Home	Hospital
Need drug Information	91.5%/89.5%	100%	88.9%	91.8%
Need disease Information	96.3%/94.7%	96.2%	94.4%	96.3%
Information for clinical procedure	84.1%/73.7%	69.2%	72.2%	81.5%
Need patient/family information	67.1%/73.7%	65.4%	77.8%	85.2%
Check for new, current health/disease recommendations	62.2%/57.9%	57.7%	61.1%	68.5%
Need evidence or guideline	51.2%/63.2%	46.2%	77.8%	68.5%
Information for quality improvement or patient safety	42.7%/26.3%	30.8%	55.6%	44.4%
Information to write a clinical policy or document	32.9%/47.4%	26.9%	55.6%	46.3%
To utilize research findings in my work setting	26.8%/21.1%	15.4%	38.9%	53.7%
Never need work-related information	1.2%	0%	5.6%	0%

Table 2
How Often Information is Needed by Site

How Often Information is Needed: To support nursing role	Nonprofit/For Profit Hospices	Home Hospice	Long Term Care or Nursing Home	Hospital
2-3 times a week	54.9% / 47.4%	53.8%	55.6%	56.9%
Once a week	19.5% / 10.5%	19.2%	11.1%	15.7%
Occasionally (1-2 times a month)	24.4% / 36.8%	26.9%	16.7%	19.6%
To support patient /family education				
2-3 times a week	18.3% / 31.6%	30.8%	44.4%	39.2%
Once a week	31.7% / 10.5%	23.1%	16.7%	17.6%
Occasionally (1-2 times a month)	42.7% / 31.6%	38.5%	27.8%	39.2%

Table 3
Access to Knowledge Databases by Site

Database Access	Nonprofit/For Profit Hospices	Home Hospice	Long Term Care or Nursing Home	Hospital
PubMed-Yes	39%/27.8%	46.2%	55.6%	70.4%
PubMed, Others-No	26.8%/38.9%	34.6%	27.8%	7.4%
Databases: Not sure if have access	24.4%/22.2%	15.4%	0%	7.4%
If access is available, do you use such E-resources at work?	84.1%/72.2%	76.9%	88.9%	98%

Table 4

Nurses' Search Skills

Do you use these search options?	Not Sure	Never do this	Rarely	Occasionally	Often
Boolean Operators (And, Or, Not)	2.2%	61.5%	15.4%	14.8%	6%
MeSH/Subject Headings	3.8%	62.1%	14.8%	13.2%	6%
Search Limits (Date, etc.)	1.6%	45.6%	20.3%	17.6%	14.8%