Examining Nurses' Knowledge and Attitudes About Pain Management Using an Online Survey

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Examining Nurses' Knowledge and Attitudes About Pain Management, Using An Online Survery

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Background/Purpose:

- Past studies suggest that healthcare providers' decisions about pain management are influenced more by their own attitudes and beliefs about pain than by a thorough assessment of their patients' current status.
- Acknowledging the well-established notion that knowledge and attitudes guide behaviors, the project team sought to examine the pain management knowledge and attitudes of nurses working in the Lehigh Valley Health Network and use the results to implement education and quality improvement (QI) initiatives to improve pain management for Network patients.
- Published literature indicates that web-based surveys offer unique advantages that more traditional survey methods lack. Thus, the project team designed a web-based pain management nurse survey tool.
- The theoretical framework was a healthcare network adaptation of Michael Harrison's model of an organization as an open system, providing a broad organizational context in which pain management can be examined.

Methods:

The project was reviewed by the Network's IRB and deemed to be QI.

- **Population and setting:** The study population for the survey QI project was all registered and licensed practical nurses working on inpatient units in the Network's three hospitals.
- **Designing the web-based survey:** The survey was comprised of the 40-item Knowledge and Attitudes Survey Regarding Pain (Ferrell & McCaffery, 2008), the 8-item Accountability for Pain Management Questionnaire (Alley, 2001), and 10 demographic items. SelectSurvey version 4.01, an online software tool (ClassApps.com, Overland Park, Kansas), was used to design the web-based survey.
- **Survey pilot testing:** The survey was pilot tested with a separate group of nurses at LVHN who were not part of the final sample. The survey was revised based on pilot subjects' feedback, resulting in the final survey. Average expected time to complete the final survey was 20 minutes.
- **Procedures:** To maximize the visibility of and interest in the online nurse survey, the project team partnered with Network Nursing leadership to raise awareness of the study and encourage participation. The Nurse leaders e-mailed their nursing staff members, explaining the survey's purpose and how results would be used; they also assured staff that participants' responses would be anonymous. Nurses were invited to participate through a link to the online survey.
- During the survey collection period, the project coordinator sent updates to Nursing leadership, reporting response rates of the units and answering survey-related questions. Nurses' survey responses were captured in an Excel database. Data were analyzed in SPSS.

Results:

- The survey was conducted during June through August, 2012.
- The survey was distributed to 1763 Network nurses, of whom 675 completed the entire survey (response rate = 38%).

Demographics

Table 1. Demographics of Nurse Respondents (n=675)

	N	%
Age	39*	12*
Number of years at Network	9*	10*
Number of years in nursing	12*	12*
Nursing Education		
BSN	373	55
Associates degree	207	31
Bachelor's degree, non-nursing	87	13
Diploma	85	13
MSN	28	4
Master's degree, non-nursing	11	2
LPN	6	1
Post Master's Nursing degree	2	0.3
Post Master's degree, non-nursing	1	0.1
Nursing role		
Staff Nurse	609	90
Other	66	10

*Mean and standard deviation

Accountability for Pain Management

- Most respondents believed themselves to be accountable (i.e. responsible) for basic actions consistent with good pain management practices, including: helping patients achieve relief (n=459; 68%), assessing pain (n=656, 97%), and initiating care plan changes (n=643; 95%).
- However, a considerable number of nurses also felt responsible for outdated actions that are inconsistent with good pain care: preventing drug tolerance (n=379, 56%), determining real versus imaginary pain (n=201; 30%), and preventing addiction (n=214, 32%).

Table 2. Accountability for Pain Management

	Disagree		Agree	
I am Accountable for:	N	%	N	%
Helping patients achieve pain relief	216	32	459	68
Preventing patients from developing drug tolerance to a given dose level of opioids	296	44	379	56
Evaluating how well the opioids ordered for patients relieve their pain	28	4	647	96
Determining real versus imaginary pain in a patient who reports pain	474	70	201	30
Limiting a patient's daily amount of opioids, regardless of the intensity of pain	538	80	137	20
Beginning efforts to change a patient's plan of care when the current treatment is not working	32	5	643	95
Doing a complete initial assessment of patients' pain	19	3	656	97
Preventing addiction in patients who need opioids for pain relief	461	68	214	32

Knowledge and Attitudes About Pain Management

- Sixty percent (n=408) scored correctly on 50-74% of the knowledge/attitudes items.
- Another 39% (n=265) answered 75-100% of the items correctly, and 0.3% (n=2) answered 25-49% correctly.
- Items addressing general pain management concepts received the highest scores.
- Items related to analgesics and to pharmacology concepts received the lowest scores.
- One-way ANOVAs were used to test differences in the Knowledge and Attitudes scores by nurses' formal education level (<4 years, 4 years, >4 years) and years of nursing experience (≤10 years, 11-20 years, 21-30 years, >30 years).
  - Nurses' pain management Knowledge and Attitudes scores significantly varied by education level, $F(2, 672) = 6.23$, $p = .002$. Nurses with more than 4 years of education had significantly higher Knowledge and Attitudes scores compared to nurses with 4 or fewer years of education.
  - Nurse Knowledge and Attitudes scores also varied by years of nursing experience, $F(3, 671) = 3.77$, $p = .01$. Nurses with more than 30 years had significantly higher nurse Knowledge and Attitudes scores than nurses with 10 or fewer years of experience. Scores did not differ among any other groups.
- Spearman correlational coefficients suggested significant relationships between nurses' education level and accountability for helping patients achieve pain relief, evaluating how well opioids relieved patients' pain, and completing an initial assessment of patients' pain.
  - Nurses with more education felt more accountable for helping patients achieve pain relief ($r[675] = .09$, $p<.05$), evaluating how well the ordered opioids relieved patients' pain ($r[675] = .10$, $p<.05$), and completing an initial assessment of patients' pain ($r[675] = .09$, $p<.05$).
- Spearman correlational coefficients also suggested significant relationships between years of nursing experience and accountability for limiting a patient's daily amount of opioids and accountability for preventing addiction.
  - The less experience a nurse had, the more accountable the nurse felt for limiting a patient's daily amount of opioids, regardless of the intensity of pain ($r[675] = -.11$, $p< .01$), and the more accountable the nurse felt for preventing addiction in patients who need opioids for pain relief ($r[675] = -.08$, $p<.05$).

Sources most often listed by respondents used to inform their clinical practice in managing patients' pain

Table 3. Sources

Sources	N	%
Policy, procedure manuals, or practice guidelines	192	28
Hospital personnel, including physicians, pharmacists, pain management specialists	179	27
Pain scales	158	23
KRAMES On-Demand, a patient education system	112	17
Internet or Intranet	45	7

Conclusions:

- Given nurses' 24-hours a day presence in hospitals, nurses can be the most influential force in improving pain care and developing relevant policies to guide and improve healthcare providers' clinical pain practices. Thus, we believe that learning about Network nurses' pain management knowledge and attitudes is a key step toward identifying nurses' educational needs, designing relevant, focused pain management programs, and determining how to make Network pain policy and clinical guidelines useful.
- Overall, Network nurses' survey responses indicate a fair level of baseline knowledge about general pain management topics. Pain education programs will be developed to reinforce general concepts and address in depth the pain content areas in which improvements are most needed, e.g. knowledge about the use of analgesics and about pharmacology concepts, understanding state-of-the-art principles related to addiction and drug tolerance.
- Our experience has demonstrated that obtaining current information about pain management-related knowledge and attitudes of on-duty nurses working in busy healthcare settings can be done efficiently and effectively using an online survey. After improving our survey processes, we plan to conduct similar surveys with other Network healthcare provider groups (e.g., pharmacists, physicians, etc.). Educational programs can then be tailored to the needs of the various provider groups.
- The response rate of 38% is lower than we had expected, yet the online methodology was advantageous for several reasons, including:
  - Quick, easy access to 1700 Network nurses, many of whom would have been challenging to reach using more traditional survey formats; and
  - The financial savings of using an electronic survey format.
- There are many ways to improve the response rates for future surveys:
  - Allow project team members to directly contact nurses in order to monitor and facilitate completion of the surveys in "real time";
  - Include more interaction between the project team and staff RNs, management, and nursing leadership in order to improve communications and understanding of the project and respond to questions directly about how to complete the survey;
  - Consider providing incentives to reinforce the importance of receiving responses from the survey recipients; and
  - Improve the survey technology so that it allows for better access and improved ease of use, to overcome some of the barriers that respondents encountered in completing the survey in a timely manner.