

# Evaluation of the Decision Support Computer Program for Cancer Pain Management

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**Purpose/Objectives:** To evaluate a decision support computer program (DSCP) for cancer pain management.

**Design:** An Internet intervention study to evaluate the usage profile, accuracy, and acceptance of the DSCP.

**Setting:** Internet and community settings.

**Sample:** 122 nurses working with patients with cancer were recruited through the Internet through a convenience sampling method.

**Methods:** The instruments included tools for registration and for evaluation of the DSCP. To evaluate the DSCP, the usage profile was measured by counting the total number of cases in which the participants used the DSCP; accuracy was measured by determining whether the decision support from the DSCP was appropriate and accurate; and acceptance was measured using the Questionnaire for User Interaction Satisfaction.

**Main Research Variables:** Usage profile, accuracy, and acceptance of the DSCP.

**Findings:** Participants used the DSCP an average of 1.49 times per person (SD = 1.16). Eighty-eight percent of the participants evaluated the DSCP as appropriate and accurate. The mean scores of overall satisfaction in four major areas of the computer program ranged from 7.46–9.69.

**Conclusions:** The DSCP could provide accurate and acceptable computerized evidence-based practice guidelines for cancer pain management.

**Implications for Nursing:** The findings suggest that researchers should develop decision support systems in multiple aspects and dimensions of cancer pain experience and that hand-held devices would increase the usability of the DSCP.

Despite systematic efforts to standardize the management of cancer pain, researchers frequently have encountered multiple barriers to cancer pain assessment and management (Agency for Healthcare Research and Quality, 1994). Among them, the inadequate assessment of patient pain because of miscommunication between patients and healthcare providers was identified as the top barrier to good pain management, even when providers used currently available standardized measurement tools (Chan & Woodruff, 1997; Thomason et al., 1998). Additionally, gender and ethnic differences in pain descriptions were found to be significant factors influencing poor communication about cancer pain between patients and healthcare providers (Chan & Woodruff).

Depending on how healthcare providers make decisions and take action on the pain reported by their patients, the consequences for patients can vary (Sinclair, 1990). Some patients may experience peaceful ends to their lives; others might have pain until death. Healthcare providers' decision making regarding pain management is crucial, especially for people with chronic cancer pain, which needs continuous assessment and management (Trill & Holland, 1993). However, decision making with ambiguous and vague data on pain that cannot

## Key Points . . .

- ▶ Acceptability to users is a major factor influencing the success of decision support systems.
- ▶ This decision support computer program could provide accurate and acceptable computerized evidence-based practice guidelines for cancer pain management.
- ▶ Hand-held devices may increase the usability of decision support systems at the bedside.

be assessed accurately even with the currently available standardized assessment tools is frequently problematic. Decision making is further complicated by many factors, such as differences in verbal and nonverbal communication, differences in pain expression, and culturally different attitudes toward pain control management (Robin, Vinard, Vernet-Maury, & Saumet, 1987). Moreover, the pressures of a fast-paced clinical setting make healthcare providers' decision making even more difficult.

To meet the healthcare needs of the United States' increasing ethnic minority populations (U.S. Census Bureau, 2000), the development of resources for nurses is imperative. Resources include a knowledge base on the gender and ethnic differences in cancer pain experiences and a computer program to support decision making about cancer pain. Such resources can help nurses improve the accuracy of their pain assessments and the adequacy of cancer pain management. However, very little is known about gender and ethnic differences in the experience of cancer pain, and very few computer programs supporting decision making on cancer pain assessment and management have been developed thus far.

In nursing, a few expert systems have been developed since the 1980s (Lowdermilk & Fishel, 1991; Probst & Rush, 1990; Sinclair, 1990). The programs allow nurses to modify their knowledge base with the addition of new information, thus increasing nurses' clinical effectiveness in the fields of nursing management, oncology nursing, and critical care nursing

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