

# Nursing Knowledge, Practice Patterns, and Learning Preferences Regarding Chemotherapy-Induced Peripheral Neuropathy

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**W**orldwide, the number of cancer survivors has increased significantly to more than 28 million individuals (Boyle, 2008), many of whom experience persistent treatment-related toxicities (Park et al., 2013) such as chemotherapy-induced peripheral neuropathy (CIPN). CIPN occurs in 40%–100% of patients receiving taxanes, platinum, vinca alkaloids, thalidomide, lenalidomide, and bortezomib (Argyriou, Bruna, Marmiroli, & Cavaletti, 2012; Gutierrez-Gutierrez, Sereno, Miralles, Casado-Saenz, & Gutierrez-Rivas, 2010; Hausheer, Schilsky, Bain, Berg-horn, & Lieberman, 2006; Kautio, Haanpaa, Kautiainen, Kalso, & Saarto, 2011; Windebank & Grisold, 2008). Symptom onset varies by chemotherapy agent and may begin soon after receiving the first treatment (Hausheer et al., 2006; Loprinzi et al., 2011; Visovsky & Daly, 2004). In addition, CIPN symptoms can persist for months to years after chemotherapy completion and may become permanent (Bakitas, 2007; Smith et al., 2011; Toftagen, 2010).

CIPN is associated with a variety of sensory, motor, and autonomic nerve impairments. Sensory manifestations can include decreased vibratory and cutaneous sensation; diminished proprioception; numbness, tingling, and burning; and neuropathic pain. Motor neuron damage may cause muscle atrophy and weakness. Urinary retention, constipation, blood pressure alterations, and sexual dysfunction may occur because of autonomic nerve injury. Difficulties with activities of daily living (ADL), such as walking, buttoning clothing, and writing, are frequently reported and, along with symptoms, can significantly impair quality of life (QOL) (Bakitas, 2007; Dodd, Cho, Cooper, & Miaskowski, 2010; Gutierrez-Gutierrez et al., 2010; Shimozuma et al., 2012; Smith et al., 2013).

**Purpose/Objectives:** To explore nurses' practice patterns, knowledge, and barriers related to chemotherapy-induced peripheral neuropathy (CIPN).

**Design:** Descriptive, cross-sectional.

**Setting:** The United States.

**Sample:** 408 oncology nurses.

**Methods:** A team of eight experts met and developed the CIPN nurse knowledge and preferences survey, which was electronically sent to randomly selected nurses.

**Main Research Variables:** The survey assessed nurses' knowledge and practice patterns regarding assessment strategies and barriers, evidence-based interventions, preferences for education, and perceived gaps in scientific knowledge.

**Findings:** Nurses in the survey lacked knowledge regarding neurotoxicity of specific agents and evidence-based treatments. CIPN-focused physical examinations and standardized measurement tools were infrequently used during assessment. The most frequently reported barriers to CIPN assessment included lack of access to measurement tools, lack of specialized skills needed for assessment, lack of confidence, and lack of time. Recommendations for future research included CIPN prevention research, exploration of CIPN-related effects on quality of life, and alternative treatments of CIPN. The majority of participants preferred online educational opportunities.

**Conclusions:** Nurses do not consistently integrate evaluation and management of CIPN in their practices.

**Implications for Nursing:** Educational offerings should incorporate web-based CIPN assessment and management content.

**Key Words:** chemotherapy-induced peripheral neuropathy; nurse knowledge; preferences; assessment; evidence-based practice

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