Advances in Nursing Care Models for Multiple Myeloma Patients with Bone Pain: A Postprint

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Abstract

This study summarizes the common clinical nursing models for multiple myeloma bone pain patients, including the bundled care model, continuity of care model, Traditional Chinese Medicine emotional nursing model, mind map nursing model, and Green nursing model, and analyzes their application prospects and explores their advantages and disadvantages, aiming to provide reference and guidance for the in-depth research and formulation of nursing models for multiple myeloma bone pain.

Full Text

Preamble

Title: Research Progress on Nursing Models for Multiple Myeloma Patients with Bone Pain

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Abstract

This study summarizes the common clinical nursing models for multiple myeloma patients with bone pain, including cluster nursing, continuity of care, Traditional Chinese Medicine emotional care, mind-mapping based care, and the PRECEDE-PROCEED model. It analyzes their application prospects and discusses their advantages and disadvantages, aiming to provide reference and guidance for further research and development of nursing models for multiple myeloma-related bone pain.

Keywords: multiple myeloma; bone pain; care bundles; extended care; Traditional Chinese Medicine; emotional care; mind mapping

1. Overview of Nursing Models

Nursing models represent the fundamental concepts and theoretical frameworks that define the essence of nursing practice from a nursing perspective, with nursing as the central focus. Guided by modern medical perspectives and nursing philosophies, nursing models have evolved from traditional basic care to "patient-centered care" and "human health-centered care," emphasizing continuity, systematic approaches, and comprehensiveness while focusing on deeper development. Pain management nursing models organize, plan, coordinate, and control the entire pain management process, involving multidisciplinary collaboration among healthcare professionals, and have become a benchmark for measuring healthcare quality. However, numerous factors contribute to inadequate pain management and control, with the lack of systematic management models being a primary reason. In recent years, many hospitals in China have begun establishing systematic pain management models with positive outcomes, yet nursing models specifically suitable for multiple myeloma bone pain patients remain under exploration.

2. Application of Different Nursing Models in MM Bone Pain Management

Domestic and international nursing professionals have actively explored nursing models for multiple myeloma bone pain. Current models in China primarily include cluster nursing, continuity of care, Traditional Chinese Medicine emotional care, and mind-mapping based care.

2.1 Cluster Nursing Model

Cluster pain nursing is an emerging nursing management model that integrates evidence-based pain care interventions. It addresses pain perception through distraction techniques such as providing magazines and music, delivers disease-related health education to clarify pain sources and intensity, and prepares patients psychologically to reduce pain levels. Wang Yaping demonstrated that translating cluster nursing concepts into practical interventions through specialized staff training enables timely, personalized pain management plans that extend beyond medication alone. By improving nutrition, sleep quality, and other aspects, this approach effectively reduces pain and enhances patient satisfaction. Zhang Hua's research indicated that combined cluster nursing interventions produce more significant effects than single interventions, alleviating pain more effectively. Cluster nursing comprises a series of simple, clear, and actionable evidence-based measures. However, its application in China remains limited, and broader clinical implementation faces challenges requiring greater collaboration among nurses, physicians, and other healthcare professionals to expand its scope and depth.

2.2 Continuity of Care Model

Continuity of care is patient-centered, addressing holistic psychological and physiological needs through continuous, uninterrupted care characterized by coherence, multi-institutional coordination, and interdisciplinary collaboration. Wu Zhiping found that continuity of care interventions effectively relieve bone pain and improve self-care abilities in multiple myeloma patients. Jiang Nana and colleagues divided patients into control and study groups, with the latter receiving combined psychological and continuity care through a specialized nursing team that conducted comprehensive assessments and developed personalized post-discharge care plans. Results confirmed that this model enhances both in-hospital and out-of-hospital self-care capabilities, thereby improving pain relief rates and reducing adverse reactions. However, managing human resources and interdisciplinary coordination presents significant challenges. Artificial intelligence technology may represent a future development trend. Additionally, patient compliance outside the hospital critically affects outcomes, making out-of-hospital care management a key area requiring attention and exploration.

2.3 Traditional Chinese Medicine Emotional Care Model

TCM emotional care uses Traditional Chinese Medicine theory to guide nursing practice through methods such as reasoning and guidance, emotional ventilation, attention shifting, desire accommodation, and emotional counteraction, with specific protocols tailored to individual patients and conditions. This model not only alleviates pain but also provides positive psychological suggestions, finding wide application across various diseases. Yang Lin and colleagues employed the "five sounds ventilation" principle, guiding patients during stable periods to assume comfortable positions in quiet environments, imagine their pain, and release it through groaning (5 times/minute, 3 times/day) while using soothing music to distract patients and reduce bone pain. Yao Huijuan's research demonstrated the feasibility of combining TCM emotional care with medication for pain relief in multiple myeloma patients and improved self-care abilities. However, current TCM emotional care research remains broad and fails to highlight distinctive TCM characteristics. Evaluation of intervention effects is limited by study quantity and quality, necessitating more high-quality research to develop more operational, distinctive, and personalized TCM emotional care protocols for multiple myeloma bone pain.

2.4 Mind-Mapping Based Care Model

Mind mapping is a tool that enhances understanding and memory by highlighting keywords and hierarchical thinking, mobilizing both brain hemispheres' potential, and finding broad application in education and management. Mind-mapping based care uses graphic, text-heavy formats to transform fragmented, dry and dull information into highly organized, intuitive visuals that help patients remember and understand, ultimately assisting nurses in providing better care. Yu Jin and colleagues used mind-mapping guided painless interventions,

printing and distributing customized maps covering medication, health education, psychological care, dietary care, routine care, and environmental care. Nurses explained each item systematically, enabling patients to clearly understand pain interventions, deepen memory, and enhance motivation for self-pain control, thereby effectively relieving bone pain. This model primarily focuses on nursing education, but studies have small sample sizes with mostly short-term post-intervention evaluations, lack objective assessment tools, and show variation in creators' skill levels and intervention timing. Future research should expand the depth of mind-mapping applications, develop deeper interventions, conduct long-term follow-up studies, and create evaluation scales for more scientific nursing practice.

2.5 PRECEDE-PROCEED Model

The PRECEDE-PROCEED model analyzes disease influencing factors from multidisciplinary perspectives to implement targeted comprehensive interventions while emphasizing individual behavior change and belief maintenance to ensure effectiveness. Yu Hong and colleagues applied this model to multiple myeloma bone pain management by assessing patients' predisposing, enabling, and reinforcing factors to develop corresponding interventions that improved pain relief rates and satisfaction. However, questions remain regarding how intervention cycles and frequency affect outcomes, and how the model combines with different health promotion approaches. Implementation in qualitative research also requires further investigation. As a participatory approach, the model's effectiveness is influenced by audience cultural background and cooperation levels, requiring attention to regional and population cultural differences, dynamic assessment of target population needs, and real-time adjustment of interventions. The model demands high comprehensive quality from nursing staff, suggesting multidisciplinary collaboration can enhance overall intervention effectiveness.

3. Reflections and Recommendations

3.1 Comprehensive Pain Assessment and Targeted Care

Nurses should thoroughly understand bone pain in multiple myeloma patients, documenting general information, disease status, pain location and intensity, and psychological state to identify pain mechanisms and address root causes. Appropriate nursing models should be selected based on specific conditions to develop targeted, individualized care plans.

3.2 Enhancing Patient Knowledge and Self-Care Abilities

Bone destruction and dissolution in multiple myeloma cause not only pain but also skeletal deformities and recurrent fractures, intensifying pain and limiting mobility. Improving patient self-care abilities is therefore crucial. Healthcare

professionals should analyze bone pain causes, implement multidisciplinary interventions covering medication, nutrition, rehabilitation exercise, and physical activity, and provide education using diverse methods (text, images, videos) tailored to patients' education levels. WeChat groups can facilitate professional guidance and peer support after discharge, further improving service quality through diversified interventions.

3.3 Improving Professional Competence and Multidisciplinary Collaboration

Effective application of various nursing models requires high comprehensive quality among nursing staff. Clinical frontline healthcare workers' pain management knowledge should be assessed first to shift pain management from passive to active, with comprehensive evaluation of patients and risk factors. Bone pain management requires greater interdisciplinary collaboration, with evidence-based assessment tools and scales used to develop comprehensive nursing measures. Future nursing work should focus on enhancing nurses' pain management knowledge and practical skills, developing more assessment tools suitable for bone pain patients, and standardizing pain management systems.

4. Conclusion

Overall, China currently shows insufficient attention to bone pain in multiple myeloma patients, with considerable variation in pain nursing management and multiple barriers to implementation, making standardized pain nursing management an urgent priority. Multiple myeloma bone pain patients require comprehensive dynamic assessment, education, and follow-up throughout initial diagnosis, hospitalization, and post-discharge periods. This study summarized and elaborated on several common nursing models for multiple myeloma bone pain patients, each with distinct advantages and disadvantages. Future nursing practice should combine the strengths of various models, learn from clinical experience, and explore more concise, scientific, and effective nursing models specifically for multiple myeloma bone pain.

Conflict of Interest Statement: The authors declare no conflicts of interest.

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Note: Figure translations are in progress. See original paper for figures.