

VALIDATION OF THE DIAGNOSIS BONE PAIN AND ITS NURSING INTERVENTIONS IN MULTIPLE MYELOMA*

Luiz Fernandes Gonçalves Fialho¹, Patricia dos Santos Claro Fuly², Mauro Leonardo Salvador Caldeira dos Santos³, Joséte Luzia Leite⁴, Sílvia Maria de Sá Basílio Lins⁵

¹RN. M.Sc. in Nursing. University Hospital Antonio Pedro at Universidade Federal Fluminense. Rio de Janeiro-RJ-Brazil.

²RN. Ph.D. in Nursing. Aurora de Afonso Costa School of Nursing at Universidade Federal Fluminense. Rio de Janeiro-RJ-Brazil.

³RN. Ph.D. in Nursing. Aurora de Afonso Costa School of Nursing at Universidade Federal Fluminense. Rio de Janeiro-RJ-Brazil.

⁴RN. Ph.D. in Nursing. Anna Nery School of Nursing at Universidade Federal do Rio de Janeiro. Rio de Janeiro-RJ-Brazil.

⁵RN. M.Sc. in Nursing. University Hospital Antonio Pedro at Universidade Federal Fluminense. Rio de Janeiro-RJ-Brazil.

ABSTRACT: Descriptive study aimed at validating the nursing diagnosis Bone Pain in multiple myeloma and its nursing interventions. A bibliographic search was undertaken to construct the assertions and the International Classification for Nursing Practice®. Next, using a form, the assertions were submitted content validation by cancer nursing specialists active at a university hospital. The analysis was carried out through simple statistics, in view of the variable of interest: agreement level, with a result superior to 0.75. The diagnosis Bone Pain and the interventions reached an agreement rate of 1.0 and 0.90, respectively. The validation indicates the relevance of the nursing diagnosis in patients with multiple myeloma and reflects the possibility to improve the quality of care through standardized nursing interventions.

DESCRIPTORS: Nursing processes; Nursing diagnosis; Multiple myeloma.

VALIDAÇÃO DO DIAGNÓSTICO DOR ÓSSEA E SUAS INTERVENÇÕES DE ENFERMAGEM NO MIELOMA MÚLTIPLO

RESUMO: Estudo descritivo, cujo objetivo fora validar o diagnóstico de enfermagem Dor Óssea no mieloma múltiplo e suas intervenções de enfermagem. Realizada busca bibliográfica para construção das afirmativas e utilizada a Classificação Internacional para a Prática de Enfermagem®. Em seguida, por meio de formulário, as afirmativas foram submetidas à validação de conteúdo por especialistas em enfermagem oncológica atuantes num hospital universitário. A análise ocorreu por meio de estatística simples, considerando a variável de interesse: índice de concordância, com resultado superior a 0,75. O diagnóstico de Dor Óssea e as intervenções atingiram índice de concordância de 1,0 e de 0,90 respectivamente. A validação aponta para a relevância do diagnóstico de enfermagem nos pacientes com mieloma múltiplo e reflete a possibilidade de melhoria da qualidade assistencial através das intervenções de enfermagem padronizadas.

DESCRIPTORIOS: Processos de enfermagem; Diagnóstico de enfermagem; Mieloma múltiplo.

VALIDACIÓN DEL DIAGNÓSTICO DOLOR ÓSEO Y SUS INTERVENCIONES DE ENFERMERÍA EN MIELOMA MÚLTIPLO

RESUMEN: Estudio descriptivo, cuyo objetivo fue validar el diagnóstico de enfermería Dolor Óseo en el mieloma múltiplo y sus intervenciones de enfermería. Fue realizada búsqueda bibliográfica para construcción de las afirmativas y utilizada la Clasificación Internacional para la Práctica de Enfermería®. Después, por medio de formulario, las afirmativas fueron sometidas a la validación de contenido por especialistas en enfermería oncológica actuantes en un hospital universitario. El análisis ocurrió por medio de estadística simple, considerando la variable de interés: índice de concordancia, con resultado superior a 0,75. El diagnóstico de Dolor Óseo y las intervenciones atingieron índice de concordancia de 1,0 y de 0,90 respectivamente. La validación apunta para la relevancia del diagnóstico de enfermería en los pacientes con mieloma múltiplo y refleja la posibilidad de mejoría de la cualidad asistencial por medio de las intervenciones de enfermería tipificadas.

DESCRIPTORIOS: Procesos de enfermería; Diagnóstico de enfermería; Mieloma múltiplo.

*Paper extracted from the thesis entitled: Subset of concepts from the International Classification for Nursing Practice for care delivery to patients with multiple myeloma. Universidade Federal Fluminense, 2012.

Corresponding author:

Sílvia Maria de Sá Basílio Lins
Universidade Federal Fluminense
Rua Bento Lisboa nº120 – 22221-011 - Rio de Janeiro-RJ-Brasil.
E-mail: silviamarialins@gmail.com

Received: 29/05/2014

Finalized: 10/10/2014

INTRODUCTION

Multiple myeloma is a malign tumor that is caused by the indiscriminate growth of plasmocytes in the bone marrow, provoking its overburden and suppressing the production of other cells, which causes the accumulation of immunoglobulin and its fragments in the peripheral blood⁽¹⁾. Bone pain is a frequent clinic symptom that happens in between 50 and 90% of the cases and is related to bone destruction, commonly located in the back and spine, confirming that the disease is fully active and in a more advanced clinical stage^(1,2).

The skeletal changes affect the patient in the form of bone pain and possible pathological fractures, demanding a specialized look from the nursing team. Therefore, it is important to recognize the nursing diagnoses related to multiple myeloma, as well as the interventions that need to be implemented with the patients with a view to their quality of life, considering that multiple myeloma remains an incurable disease.

The use of the nursing diagnoses and interventions in clinical practice can benefit from the use of a standardized professional language for the daily registers of the methodological steps in the nursing process. Among the possible languages, the International Classification for Nursing Practice - ICNP® is highlighted, which is a combinatory terminology that favors the cross mapping of the terms used in nursing practice and the existing classifications. This representative instrument describes the nursing practice through a combination of terms described in their seven fundamental axes (Focus, Judgment, Client, Action, Means, Location and Time) for the description of nursing diagnoses, interventions and outcomes^(3,4).

In addition, the use of the ICNP® as standardized language to register the nursing process complies with Federal Nursing Council Resolution 358/2009, which regulated the implementation of the Nursing Care Systemization – NCS in nursing services and considers this as a work process appropriate to the community's health needs.

In Brazil, some studies have been developed to create subsets of concepts and/or validate diagnoses and interventions by means of the ICNP®⁽⁵⁻⁷⁾. This study is a subproject of the

research Subsets of ICNP® Concepts for Multiple Myeloma Patients, which has been developed at the hematology nursing ward of a teaching hospital in the city of Niterói, Brazil.

The elaboration of Subsets of ICNP® Concepts has been a strategy of the International Council of Nurses – ICN to facilitate the use of this classification in the execution and registering of the Nursing Process. The Subsets of ICNP® Concepts consist of pre-established formulations of nursing diagnoses, interventions and outcomes, which can be focused on clients (individual, family and community) as well as priorities or specific health conditions, care environments or specialties, as well as to specific nursing phenomena⁽⁸⁾.

Within the broader elaboration project of the ICNP® Subset, the nursing diagnosis Bone Pain very frequently emerged based on the literature review, so that the objective in this study was to validate the nursing diagnosis Bone Pain and its respective nursing interventions. It is highlighted that the validation is a phase ICN recommends to construct the subsets of concepts, granting a certificate of applicability in clinical practice to the validated data⁽⁸⁾.

METHOD

An exploratory and descriptive study was developed at a university hospital located in the city of Niterói, in the State of Rio de Janeiro, in 2012. The participants received a form with the diagnostic assertion Bone Pain, its definition and its respective Nursing Interventions, and were expected to score the diagnosis and the proposed interventions.

The study participants who contributed to the validation phase were nine nurses who worked at the hematology nursing wards and the chemotherapy outpatient clinic of the research scenario, with five or more years of experience in those specific sectors and a graduate degree in oncology or hematology, inclusion criteria used to select the participants and consider them as experts in the area.

To achieve the proposed objective, the project was executed in two phases. The first research phase was the formulation of the diagnosis Bone Pain and its respective interventions, which was

based on a bibliographic survey of Brazilian and international papers in the database Scientific and technical literature of Latin America and the Caribbean –LILACS, using Multiple Myeloma as the only descriptor. The following inclusion criteria were used to assess the articles: a five-year timeframe (2008-2012), written in English, Spanish and Portuguese; and fully available.

Articles were selected that presented bone pain as clinical evidence of multiple myeloma, which was then submitted to cross mapping with the terms in the focus axis of ICNP® version 2, leading to the formulation of the diagnostic assertion Bone Pain. The construction of the Nursing Interventions was based on nursing literature about the theme pain, considering both general and cancer pain and, to formulate the assertion, the rules established by the ICNP® were used, that is, one term from the action axis and one target term.

In the second phase of the research, the

diagnostic assertion of Bone Pain and the respective Nursing Interventions were submitted to the content validation process by experts, who were the nine nurses who participated in the study. For the validation, the variable of interest Agreement Rate was considered. The validation process (figure 1) consisted in the attribution of a score that ranged from 1 to 5: Score 1 – does not apply; Score 2 – hardly applies; Score 3 – somehow applies; Score 4 – considerably applies; Score 5 – is very characteristic. Each score received a weight: 1 = 0; 2 = 0.25; 3 = 0.50; 4 = 0.75 and 5 = 1. Then, the weighted average of all the research participants' scores was calculated and those diagnostic assertions and respective interventions with Agreement Rates superior to 0.75 were considered valid.

This project received approval from the Research Ethics Committee of the institution where the research was developed, registered under number 369/11 on 12/02/2011.

Figure 1 - Validation process of the nursing diagnosis bone pain and its nursing interventions. Niterói, RJ, 2013.

Score	Meaning	Weight
1	Does not apply	0
2	Hardly applies	0,25
3	Somehow applies	0,50
4	Considerably applies	0,75
5	Is very characteristic	1

RESULTS

The survey in the database resulted in 30 papers on the theme multiple myeloma, 15 of which (50%) presented bone pain as clinical evidence of the disease. As a result of the cross mapping with the terms on the ICNP® focus axis, the presence of the term bone pain was identified in the classification, based on which the diagnostic assertion Bone Pain was identified.

Next, departing from the Brazilian and international nursing literature, which addressed both general and cancer pain, the specific nursing interventions were constructed for the elaborated diagnosis. The ICNP® orientations for their construction were also followed. The nursing interventions are displayed in Figure 2.

When presented to the experts, the diagnosis Bone Pain reached an agreement rate of 1, which means that all evaluators attributed the maximum

agreement level to this diagnosis. As regards the Nursing interventions, they were assessed as a whole, which means that the group of nursing interventions received a score from each expert. The agreement rate for this set of interventions corresponded to 0.90, which any suggestion to include other nursing interventions for the diagnosis under analysis.

Figure 2 - Nursing diagnosis bone pain and its respective nursing interventions in multiple myeloma. Niterói, RJ, 2013

Nursing diagnosis	Nursing interventions
<p>BONE PAIN: musculoskeletal pain with feeling that originates in the periosteum, compressed fracture; the feelings are normally described as profound pain, which is penetrating and present while at rest and when immobile⁽⁷⁾.</p>	<p>Establish distinction between pain and suffering. Identify attitude towards pain. Teach pain management. Minimize patient's fear. Advise on medication regime and adverse effects. Maintain patient's dignity and privacy with regard to pain. Assess whether pain is bland, moderate or severe. Start patient-controlled analgesia. Promote pain relief with prescribed analgesic. Administer analgesic before body movements. Assess response to pain therapy. Manage negative response to treatment. Explain and promote non-invasive and non-pharmacological pain relief measures: appropriate positioning, distraction technique (music therapy, conversation, television, among others), breathing exercises, massages, application of warming/cooling device and relaxation techniques. Consult for pain management. Demonstrate acceptance of the patient's pain. Encourage walking without help if possible. Encourage positive assertions.</p>

DISCUSSION

Multiple myeloma has been classified as bone cancer and was later included among the onco-hematological diseases⁽⁹⁾. Bone pain is one of the components of the triad that characterizes the disease and one of the most common complications of myeloma. It is related to the destruction of the bone⁽¹⁰⁻¹¹⁾, which results from a disequilibrium in the bone formation and reabsorption⁽¹¹⁾. It is due to increased osteoclast activity, provoked by the activating factors produced by the myelomatous cells, causing intense bone reabsorption with disseminated bone loss, lytic lesions and fractures^(10,13).

The intense pain significantly interferes in patients, impairing their daily performance and quality of life. In case of myeloma, it can be described as intolerable, and can be refractory to the most common medication treatment (with non-opioids or weak opioids). This explains the importance of nursing interventions, considering that these can offer emotional support and safety, encouraging the clients to share their doubts, reducing fears and anxieties and creating satisfactory conditions to cope with the pain, besides granting opportunities for the nurses to

offer realistic feedback and reassurance⁽¹⁴⁻¹⁶⁾.

When the nurses validate the proposed nursing interventions, they consider that these activities are performed daily with the Multiple Myeloma patients. These interventions are justified in the literature as: Consult for pain management, performed for the purpose of achieving appropriate pain control; Demonstrate acceptance of the patient's pain, in that the patient should be given the impression that his/her pain is understood and can be controlled; Establish a distinction between pain and suffering, the pain concept involves the sensitive-discriminatory components (physical feeling), affective-motivational (emotions) and cognitive-evaluative (thoughts)⁽¹⁷⁾. The pain results from the interaction between the physical and chemical aspect, the harmful stimulus and its interaction with the individual's pain-related emotional and cultural factors, and therefore constitutes a private and subjective experience, which results not only from tissue lesion characteristics⁽¹⁸⁾.

Identify the attitude towards the pain, the (physical and behavioral) visible signs of pain are determined by the individual's pain tolerance and its duration, not by its intensity. In addition, the cultural factors of the specific situation interfere

in how the individual expresses the pain(18,19); Teach the pain management, as the efficient control of the pain can considerably improve the general physical functioning⁽¹⁹⁾; Minimize the patient's fear, people prepared for painful procedures through explanations about the actual feelings present less stress than people who receive vague explanations⁽¹⁹⁾.

Advise on medication regimen and side effects. The advice on the management of side effects should follow the protocol elaborated by the team, based on the scientific literature and on the team members' clinical experience; Maintain the patient's dignity and privacy with regard to his/her pain; providing for a therapeutic environment in terms of temperature, humidity, ventilation, lighting and noise⁽¹⁹⁾; Assess whether the pain is bland, moderate or severe using the most appropriate pain intensity scale^(14,19).

Start patient-controlled analgesia, avoids the delays inherent in the administration of analgesics; Promote pain relief through the prescribed analgesic, the oral administration route should be chosen when possible, choosing the intravenous route for frequent administrations, as the absorption is guaranteed and not painful⁽¹⁹⁾; Administer analgesics before body movements, the preventive approach can reduce the total daily dose and reduce the anxiety of requesting the medication and awaiting its effect; Assess the response to the pain therapy, asking the patient to assess the pain intensity before the medication and the type of relief it provides half an hour after its administration⁽¹⁸⁾; Manage negative treatment responses, frequently reassessing the pain and modifying the care plan in case of a negative response⁽¹⁵⁾.

Explain and promote non-invasive and non-pharmacological pain relief measures: appropriate positioning, distraction technique (music therapy, conversation, television), do breathing exercises, applying warming/cooling device and relaxation techniques, measures that can enhance the therapeutic effects of the analgesics and grant a growing feeling of control and active involvement. In addition, it reduces the stress, decreases the physical fatigue, lowers the threshold of sensory stimuli, induces to visualization and facilitates the bodily energy flow through the thalamic reflex^(17,18).

Encourage walking without help, if possible, promoting ideal mobility and discussing the value of exercises for muscle strengthening and

stretching; Encourage positive assertions, praising the patients for their resistance and convincing them to control the pain, independently of the way they behaved. This helps the patients to transform the behaviors the pain produced into healthy behaviors and wellbeing⁽¹⁵⁾.

The nursing interventions proposed here are aimed at the relief of cancer-related pain. These interventions intend to create a trust relationship between the professional and the patient, control the environmental conditions and grant a feeling of comfort in order to facilitate the control of the pain.

CONCLUSION

The nursing diagnosis Bone Pain reached the maximum inter-rater agreement rate in this research. The proposed nursing interventions also reached a high rate. The versatility of the ICNP® is highlighted, which attends to multiple human response, easily adapting to the local work culture; considering that the study participants accepted and understood the proposed assertions well.

This research, as part of a larger project to construct a Subset of nursing diagnoses and interventions for multiple myeloma, contributes to the institutional efforts of the place of study towards the formalization and registering of the nursing process at the hematology and chemotherapy sector. The validation process by the nurses engaged in care permitted the construction of assertions that are commonly used in this specific area and that should serve as a reference for these professionals.

This is an important step for the use of a classification system in clinical nursing which permits the standardization of language, the measuring of the outcomes achieved through the care actions, and to support an evidence-based practice, contributing to the improvement of the quality of care.

REFERENCES

1. Lorenzi TF. Manual de hematologia: propedêutica e clínica. 4a ed. Rio de Janeiro: Guanabara Koogan; 2011.
2. Silva ROP, Branda KMA, Pinto PVM, Faria RMD, Clementino NCD, Silva CMS, et al. Mieloma múltiplo: características clínicas e laboratoriais ao diagnóstico e estudo prognóstico. Rev Bras Hematol

- Hemoter. [Internet] 2009; 31(2). [acesso em 12 jun 2013]. Disponível: http://www.scielo.br/scielo.php?pid=S1516-84842009000200005&script=sci_arttext. doi: <http://dx.doi.org/10.1590/S1516-848420090005000013>
3. Lins SMSB, Santo FHE, Fuly PSC, Garcia TR. Subconjunto de conceitos diagnósticos da CIPE® para portadores de doença renal crônica. *Rev. bras. enferm.* 2013; 66(2): 180-9.
 4. Santana LL, Mazza VA, Taube SAM, Sarquis LMM. Diagnósticos e intervenções de enfermagem em unidade de pronto atendimento à luz das necessidades humanas básicas. *Cogitare Enferm.* 2011; 16(4):675-81.
 5. Carvalho MWA, Nóbrega MML, Garcia TR. Processo e resultados do desenvolvimento de um Catálogo CIPE® para dor oncológica. *Rev. Esc. Enferm. USP.* [Internet] 2013; 47(5) [acesso em 01 fev 2014]. Disponível: http://www.scielo.br/scielo.php?pid=S0080-62342013000501060&script=sci_arttext&lng=pt. doi: <http://dx.doi.org/10.1590/S0080-623420130000500008>
 6. Medeiros ANT, Nóbrega MML. Terminological subsets of the international classification for nursing practice - ICNP® for senior patients: a methodological study. *Online Braz J Nurs.* [Internet] 2012, 11 (2). [acesso em 01 fev 2014]. Disponível: <http://www.objnursing.uff.br/index.php/nursing/article/view/4013>. doi: <http://dx.doi.org/10.5935/1676-4285.2012S007>
 7. Fialho LFG, Fuly PSC. CIPE® catalogue for patients with multiple myeloma: a descriptive study. *Online Braz J Nurs.* [Internet] 2012; 11(2) [acesso em 15 mar 2013]. Disponível em <http://www.objnursing.uff.br/index.php/nursing/article/view/4013>. doi: <http://dx.doi.org/10.1590/S1516-848420090005000013>
 8. Conselho Internacional de Enfermeiros. Classificação internacional para a prática de enfermagem versão 2. São Paulo: Algor; 2011.
 9. Sakae TM, Santos NAF, Baldessar MZ. Sobrevida de pacientes portadores de mieloma múltiplo atendidos em hospital de referência no sul de Santa Catarina. *Rev Bras Clin Med.* 2010; 8(3): 216-21
 10. Andrade VP. Aspectos morfológicos da infiltração da medula óssea por condições, exibindo diferenciação plasmocítica e gamopatia monoclonal. *Rev Bras Hematol Hemoter.* 2009; 3 (4): 273-9.
 11. Santos PSS, Gambirazi LM, Felix VB, Magalhães MHCG. Osteonecrose maxilar em pacientes portadores de doenças neoplásicas sob o uso de bisfosfonatos. *Rev Bras Hematol Hemoter.* 2008; 30(6): 501-4.
 12. Heinem JR; Santos JS. Mieloma múltiplo com fratura no colo do úmero: relato de caso. *Rev. HCPA* 2010; 30(1): 68-72.
 13. Leão ER, Chaves LD. Dor: 5º sinal vital: reflexões de enfermagem. 2ª ed. São Paulo: Martinari; 2007.
 14. Doenges ME, Moorhouse MF, Murr AC. Diagnóstico de enfermagem: intervenções, prioridade, fundamentos. Rio de Janeiro: Guanabara Koogan; 2012.
 15. Santos AG. Characterization of cancer pain in patients submitted to radiotherapy. *Rev enferm UFPE.* 2012; 6(9): 2111-8.
 16. Pimenta CAM, Santos EMM, Chaves LD, Martins LM, Gutierrez BAO. Controle da dor no pós-operatório. *Rev. Esc. Enferm. USP.* 2001; 35 (2): 180-3.
 17. Budó MLD, Nicolini D, Resta DG, Büttendbender, Pippi MC e Ressel LB. A cultura permeando os sentimentos e reações frente a dor. *Rev. Esc. Enf. USP.* 2007; 41(1): 36-46.
 18. Barbosa MH, Araújo NF, Silva JA, Corrêa TB, Moreira TM, Andrade EV. Avaliação da intensidade da dor e analgesia em pacientes no período pós-operatório de cirurgias ortopédicas. *Esc. Anna Nery.* 2014; 18(1):143-7.
 19. Carpenito LJ. Diagnósticos de enfermagem: aplicação à prática clínica. 8ª Ed. Porto Alegre: Artmed; 2002.