ABSTRACT

Objective: to analyze nursing outcomes and indicators from the Nursing Outcomes Classification/NOC (Classification of the Results of Nursing Interventions) in the evaluation of patients with chronic pain in an outpatient nursing consultation. Method: a quantitative, longitudinal, prospective study with nine patients, using an instrument containing NOC results and indicators. Data were analyzed using descriptive statistics using the t-Student test. Results: nine patients with a mean age of 56.0 ± 18.2 years, female (88.9%), white (66.7%) on authorized sick leave (66%) due to chronic pain were evaluated. Five results and 11 indicators were applied, the Pain Control presented two indicators with statistical significance. The Pain Level improved in the scores of two indicators, and Client Satisfaction maintained high scores. Conclusion: the nursing outcomes and indicators showed clinical improvement of patients with chronic pain in the evaluation at an outpatient nursing consultation. Descriptors: Outcome Assessment (Health Care); Chronic pain; Standardized Nursing Terminology; Nursing Process; Nursing; Classification.

RESUMO

Objetivo: analisar resultados e indicadores de enfermagem da Nursing Outcomes Classification/NOC (Clasificación de los Resultados de Enfermería) na avaliação de pacientes com dor crónica em consulta de enfermagem ambulatorial. Método: estudo quantitativo, longitudinal, prospectivo, com nove pacientes, por meio de instrumento contendo resultados e indicadores da NOC. Analisaram-se os dados pela estatística descritiva com uso do teste t-Student. Resultados: foram avaliados nove pacientes com idade média de 56,0 ± 18,2 anos, sexo feminino (88,9 %), brancos (66,7%) e afastados do trabalho (66%) pela Dor Crónica. Cinco resultados e 11 indicadores foram aplicados, o Controle da Dor apresentou dois indicadores com significância estatística. O Nível de Dor apresentou melhora nos escores de dois indicadores, e o Satisfação do Cliente manteve escores altos. Conclusão: os resultados de enfermagem e indicadores demonstraram melhora clínica dos pacientes com dor crónica na avaliação em consulta de enfermagem ambulatorial. Descriptores: Avaliação de Resultados (Cuidados em Saúde); Dor crónica; Terminologia Padronizada em Enfermagem; Processo de Enfermagem; Enfermagem; Classificação.
INTRODUCTION

Pain is one of the main reasons why patients seek health care and is often undertreated, leading them to disabling states. According to the report on pain by the Institute of Medicine (IOM), chronic pain affects about 116 million American adults and cost $ 635 billion dollars in medical treatment and loss of worker productivity.

International studies show that chronic pain estimates are 11.2% to 25% in adults, and in 4% to 16% of these cases, the manifestation of pain occurs in a severe and incapacitating way. In Brazil, studies indicate the prevalence of chronic pain in the adult population at around 28%, most often in women with low education, with spinal diseases as one of the main causes.

This scenario refers to the importance of nursing care to these patients, who constitute an expressive contingent of the population and who need to be evaluated, diagnosed and treated correctly. Regarding nursing care for these patients, nurses can use the diagnostic classification of NANDA International (NANDA-I), using the Nursing Diagnosis (ND) for Chronic pain. The assessment of the patient’s evolution with this ND also requires the nurse to use instruments that can reliably direct them and verify if the result of relief or resolution of the problem was achieved after the implementation of interventions.

In this context, nurses have used various pain assessment scales, such as the Numerical Verbal Scale (ENV) and the Visual Analog Scale (VAS), recommended by the World Health Organization. However, a study that evaluated the applicability of pain assessment instruments found that one-dimensional scales have limitations in their practical use, as they consider a single aspect of pain. On the other hand, multidimensional scales, despite providing broader data, are difficult to apply because they include awfully long questionnaires.

Thus, the Nursing Outcomes Classification (NOC), presented as an alternative method to evaluate the results obtained by a patient with ND of Chronic Pain. Researches on patient evaluation, through NOC outcomes, demonstrated the applicability of this classification in nursing practice in different contexts. However, no study has been found that has applied NOC in the scenario of care for patients with ND Chronic Pain followed up in an outpatient nursing consultation.

Thus, the research question of this study is: do the NOC outcomes and indicators facilitate and give visibility to the assessment of patients with chronic pain treated by nurses in an outpatient consultation?

OBJECTIVE

- To analyze nursing outcomes and indicators of the Nursing Outcomes Classification/NOC (Classification of the Results of Nursing Interventions) in the evaluation of patients with chronic pain in outpatient nursing consultation.

METHOD

A prospective longitudinal quantitative study based on result research to document the quality and efficiency of nursing care in patients with chronic pain cared for at the outpatient clinic during a nursing consultation at a large university hospital in southern Brazil.

The intentional sample consisted of nine patients selected in nursing consultations in an outpatient clinic for chronic pain. The inclusion criteria were adult patients of both sexes with ND Chronic Pain, in their first nursing consultation and who were available to attend consultations at intervals of 21 days during the research period. Exclusion criteria have not been established.

The first stage included the adaptation of an instrument with the NOC outcomes and indicators, based on a previous study. The second stage consisted of applying the instrument with five outcomes and 11 NOC indicators in a pilot group of patients in the nursing consultations in the chronic pain outpatient clinic of this hospital performed by professors and undergraduate nursing students.

Data collection was performed in two nursing consultations, from August to November 2017. The instrument, applied by the researcher, consisted of the name of the five NOC outcomes with their definitions and the list of eleven indicators, with their respective conceptual and operational definitions, according to the five-point Likert scale, where the lowest score represents the least desirable state and the highest, the most desirable. The first measurement of the NOC outcomes and indicators was performed at the first nursing consultation and the next evaluation after 21 days. Clinical, sociodemographic and nursing care data were collected from the patient's computerized medical record.

The data were analyzed using the statistical software SPSS version 18.0. Continuous variables were expressed as mean and standard deviation, according to data distribution. Categorical variables were expressed as percentages and absolute numbers. The T-student test was used to compare the scores of the NOC indicators identified in nursing consultations. A significance level of 5% (p < or = 0.05) was adopted, with a 95% confidence interval.

This study followed the ethical aspects of Resolution 466 of the National Health Council and the research project was approved by the

http://www.ufpe.br/revistaenfermagem/
The nine patients with ND Chronic Pain evaluated had Musculoskeletal impairment as a related factor. Most of them were female (88.9%), with an average age of 55.8 ± 13.5 years, white (66.7%), married (33.3%), catholics (77%) and away from work, with the benefit of the National Social Security Institute (INSS) (66%). The majority (77.8%) lived in Porto Alegre and almost half of them studied eight years (44%). As for clinical data, all patients were referred to the nursing consultation by the medical team for multidisciplinary pain management. The main previous diseases of patients were those of musculoskeletal origin, such as: fibromyalgia (66.6%), herniated disc (22%), degenerative disc disease (11%) and supraspinatus tendinopathy (11%). In addition to musculoskeletal diseases, some patients with psychiatric (33%), endocrine (33%), respiratory (16.7%) and oncological (8.3%) diseases were also identified.

So, 19 different nursing care were oriented and/or prescribed for the patients under study, as shown in Table 1.

<table>
<thead>
<tr>
<th>Nursing care</th>
<th>n %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of the Numerical Verbal Scale - ENV to assess pain intensity</td>
<td>9 100</td>
</tr>
<tr>
<td>Investigation of pain locality and characteristics</td>
<td>9 100</td>
</tr>
<tr>
<td>Guidance on performing stretching exercises</td>
<td>6 66.6</td>
</tr>
<tr>
<td>Guidance on the use of local heat / hot water bottle / hot bath</td>
<td>6 66.6</td>
</tr>
<tr>
<td>Guidance on non-pharmacological therapies for pain relief</td>
<td>4 44.4</td>
</tr>
<tr>
<td>Guidance on the use of analgesic prescribed appropriately</td>
<td>4 44.4</td>
</tr>
<tr>
<td>Guidance on movement limitations according to your pain tolerance; recognition of your limits</td>
<td>3 33.3</td>
</tr>
<tr>
<td>Guidance on preventive measures for falls</td>
<td>2 22.2</td>
</tr>
<tr>
<td>Guidance to avoid intense activity for long periods to avoid fatigue</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Guidance on pain management</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Guidance for hand exercises with ball</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Guidance for massages</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Guidance on foot care due to diabetes</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Guidance on walking for weight loss</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Guidance on cigarette risks, with the suggestion to participate in groups for smoking cessation in the Basic Health Unit</td>
<td>1 111</td>
</tr>
<tr>
<td>Encouragement to lose weight</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Encouragement for health care, food and hydration</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Emotional support</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Incentive to replace food with healthier options</td>
<td>1 11.1</td>
</tr>
<tr>
<td>Total</td>
<td>19 100</td>
</tr>
</tbody>
</table>

Note: *f = frequency. % = percentage

Five nursing outcomes (NO) and eleven indicators from NOC were selected, with their conceptual and operational definitions according to the magnitudes of the five-point Likert scale in order to compose the instrument which would evaluate the patients under study as shown in Figure 1.
Length of pain episodes (210204)
Conceptual definition: It is characterized by the duration of pain episodes.

Facial expressions of pain (210206)
Conceptual definition: It is characterized by changes in facial mimicry during painful episodes.

NO Sleep (0004): Natural periodic suspension of consciousness during which the body recovers.

Physical well-being (200801)
Conceptual definition: State of general physical comfort.

Psychological well-being (200803)
Conceptual definition: State in which the person is well with himself and with others.

Social support from family (200806)
Conceptual definition: There is family, although, lay, I assume responsibility for the physical and emotional needs of the other who is unable to take care of himself.

NO Client Satisfaction: Pain Management (3016): Extent of positive perception of nursing care to relieve pain.

Pain level regularly monitored (301602)
Conceptual definition: regularity with which nursing monitors the patient's pain level.

Actions taken to relieve pain and provide comfort (301604/301605)
Conceptual definition: It is characterized by actions implemented by the nursing team to relieve the pain/discomfort of the patient.

Figure 1. Nursing Outcomes with their indicators, definitions and magnitudes according to the NOC Likert scale applied to patients with Chronic Pain in outpatient nursing consultations. Porto Alegre (RS), Brazil, 2017.

Note: The numbers correspond to the Likert Scale scores, from 1 to 5, where the smallest number represents the least desirable state and the largest number, the most desirable state.
The mean scores of the five nursing outcomes and 11 indicators applied to the nine patients followed in two outpatient nursing consultations and the level of significance are presented according to Table 2.

Table 2. Mean scores of the five nursing outcomes and eleven NOC indicators applied to patients with Chronic Pain treated in outpatient nursing consultations. Porto Alegre (RS), Brazil, 2017.

<table>
<thead>
<tr>
<th>Nursing Outcomes (numerical codes) and Indicators</th>
<th>NC1 (No. 9)</th>
<th>NC2 (No. 9)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO Pain Control (1605)</td>
<td>2.66 (0.79)</td>
<td>3.77 (0.66)</td>
<td>0.001</td>
</tr>
<tr>
<td>Describes causal factors</td>
<td>2.78 (0.44)</td>
<td>4.11 (0.72)</td>
<td>0.002</td>
</tr>
<tr>
<td>Use of non-analgesic relief measures</td>
<td>2.56 (1.23)</td>
<td>3.44 (0.88)</td>
<td>0.002</td>
</tr>
<tr>
<td>NO Pain Level (2102)</td>
<td>2.96 (0.42)</td>
<td>2.88 (0.47)</td>
<td>0.753</td>
</tr>
<tr>
<td>Reported pain</td>
<td>2.22 (1.20)</td>
<td>2.44 (0.88)</td>
<td>0.665</td>
</tr>
<tr>
<td>Length of pain episodes</td>
<td>2.00 (0.70)</td>
<td>2.22 (0.44)</td>
<td>0.347</td>
</tr>
<tr>
<td>Facial expressions of pain</td>
<td>4.67 (0.70)</td>
<td>4.00 (1.14)</td>
<td>0.111</td>
</tr>
<tr>
<td>NO Sleep (0004)</td>
<td>3.22 (0.83)</td>
<td>3.33 (1.11)</td>
<td>0.681</td>
</tr>
<tr>
<td>Sleep quality</td>
<td>3.22 (0.83)</td>
<td>3.33 (1.11)</td>
<td>0.681</td>
</tr>
<tr>
<td>NO Comfort status (2008)</td>
<td>2.70 (0.53)</td>
<td>2.81 (0.53)</td>
<td>0.650</td>
</tr>
<tr>
<td>Physical well-being</td>
<td>3.00 (0.70)</td>
<td>2.78 (0.44)</td>
<td>0.447</td>
</tr>
<tr>
<td>Psychological well-being</td>
<td>2.78 (1.40)</td>
<td>3.22 (1.48)</td>
<td>0.347</td>
</tr>
<tr>
<td>Social support from family</td>
<td>2.33 (0.86)</td>
<td>2.44 (1.13)</td>
<td>0.681</td>
</tr>
<tr>
<td>NO Client Satisfaction: Pain Management (3016)</td>
<td>4.50 (0.61)</td>
<td>4.66 (0.50)</td>
<td>0.545</td>
</tr>
<tr>
<td>Pain level regularly monitored</td>
<td>4.56 (0.52)</td>
<td>4.67 (0.50)</td>
<td>0.681</td>
</tr>
<tr>
<td>Actions taken to relieve pain and provide comfort</td>
<td>4.44 (0.72)</td>
<td>4.67 (0.50)</td>
<td>0.447</td>
</tr>
</tbody>
</table>

Note: The t-student test was used for paired samples with values expressed as mean ± standard deviation, P: 5% significance.

NC1 - Nursing Consultation 1; NC2 - Nursing Consultation 2

**DISCUSSION**

In this study, five NO and eleven indicators from NOC were selected and applied in the evaluation of patients with ND Chronic Pain who were followed up in an outpatient nursing consultation. The NO Pain Control, belonging to Domain IV, Health Knowledge and Behavior, was the only one that showed a statistically significant improvement. The same as personal actions to control pain and, in this study, two of its indicators were used: Describes causal factors, characterized by the patient’s ability to describe the factors causing pain and, Use of non-analgesic relief measures, characterized by the patient's ability to use methods or techniques for the prevention and/or treatment of pain that does not involve the administration of drugs. These two indicators showed statistical significance (p = 0.002) highlighting that patients went from a level of personal actions for pain control rarely shown to frequently shown, using care such as, for example, relaxation, massage, cold and heat application, walking and exercises (stretching and resistance movements), as instructed by nurses in consultations.

In view of the improvement of these indicators, it is also inferred that the nurse, in addition to proposing and advising on non-pharmacological interventions for pain relief, used skills such as empathy, good communication and established a humanized relationship with the patient, so that they could express their needs, which could then be addressed based on the care plan. The literature highlights that these skills are essential for establishing an interpersonal relationship between health professional and patient, which is corroborated by the ten essential competencies established by the Nurse of the future nursing core competencies which describes that nurses in the contemporary world and in the future require communication skills and abilities, evidence-based practice and process skills in order to ensure best practice and patient safety.

Perceived Health, belonging to Domain V of the NO Pain Level, is defined as “Severity of observed or reported pain”, and was applied in this study by means of three important indicators: Reported pain; Length of pain episodes and Facial expressions of pain. The averages of their scores were not statistically significant between the evaluations, but they are considered substantial indicators to estimate the patient's pain. It was observed that the reported pain and the duration of the episodes of pain do not improve if they remain substantial. The indicator for Facial expressions of pain indicator remained mild.

Chronic Pain presents manifestations that are different from those presented in Acute Pain. Although there is no agreement on the definition of chronic pain, it is commonly referred to as pain without biological value, unresponsive to treatments based on specific medications and lasting more than six months. Chronic pain is...
severe and difficult to manage, and perhaps, the study's indicators related to the level of pain did not improve significantly for this same reason.

However, it was observed that the most frequently implemented interventions to patients were those related to the assessment of pain intensity, its characteristics and location, which demonstrates the nurses' commitment to the episodes of pain experienced by the patient. Nursing care becomes qualified when the patient's pain is evaluated and treated, and in order for that to occur, one must take into account the clinical condition, the stage of the disease and the patient's inability to communicate their pain.5,6

Care related to guidance and the use of prescribed analgesics has also been shown to be recurrent in consultations, as patients, often due to psychological, physiological and behavioral changes, present inappropriate use of medications. It is known that the nurse must emphasize the importance of the patient in taking the medications at the established times and on the possible adverse effects and drug interactions.2

Research also points out1-3 that undertreatment of patients with persistent chronic pain can lead to a strong desire for oral medication, and further describes that drug addiction in patients is a chronic brain condition that results from compulsive medication use. As an example of this, results of a study that aimed to investigate drug addiction in patients with chronic non-cancer pain showed that drug addiction was present in 40% of patients; and the patient's physical disability and catastrophization increases the level of chemical dependence.1 Thus, the guidelines for the use of analgesics frequently performed in the nursing consultations of the present study are important care to be provided for these patients.

The NO Sleep, from Domain I, Functional Health, 9 was evaluated by the indicator Sleep quality and despite some improvement between the evaluations, it was not statistically significant, remaining moderately compromised. Chronicification of pain alters sleep quality, aggravating the quality of life of patients.3 Thus, it is important to pay attention to interventions that can decrease pain and consequently improve the patient's sleep. Therefore, it was observed that in a study carried out with women with fibromyalgia, factors associated with the impact of this disease on their quality of life were evaluated. The participants had statistically significant levels of pain (p <0.0001), worsening sleep quality (p <0.0001) and a higher level of disability (p <0.0001), confirming that individuals with chronic pain have high impact on your quality of life and sleep.18

The NO Comfort Status is in the Perceived Health domain and is defined as “overall physical, psychospiritual, sociocultural, and environmental ease and safety of an individual”.9 The indicators of psychological well-being, assessed by observing the patient's positive attitudes related to his self-determination and emotional response to pain treatment; and Social support from the family, assessed by the finding that the patient receives at least one type of emotional support (affection, companionship, counseling or financial assistance) 12 showed a slight improvement in their means, but was still substantially compromised. The indicator Physical well-being showed a slight worsening, showing itself to be substantially compromised and indicating the need to strengthen nursing interventions for the same. These indicators are important to support nurses in the management and control of chronic pain, in addition to providing evidence of the impact of psychological factors on this experience.19

Linked to this, a survey found that the presence of a support partner has been associated with reduced symptom burden (including less pain), improved quality of life and less distress symptoms in patients with chronic lymphocytic leukemia, who experience chronic pain for years.20 These findings demonstrate once again the importance of multiprofessional teamwork, in order to contemplate the biopsychosocial factors of patients with chronic pain.

In addition, it is observed that nursing care regarding guidelines on movement limitations according to pain tolerance, recognition of their limits and the prevention of falls were present in the consultations in a discreet way, and that they could be prescribed more frequently, considering that all patients had musculoskeletal impairment as an etiological factor.

Although the emotional support care was not expressive in this sample, it is known that it is intrinsic to the consultation of the patient with Chronic Pain. People in a state of intractable pain and suffering end up having their interpersonal relationships impaired and their quality of life affected. Suffering caused by pain also leads to job loss and financial problems, social isolation, worry, anxiety, depression and, at times, suicide.19

The NO Client Satisfaction: pain management is defined as “extent of positive perception of nursing care to relieve pain”, present in Domain 5, Perceived Health.9 Two of its indicators were selected and applied in this study: Pain level regularly monitored, characterized by the regularity with which nursing monitors the patient's pain level, and the indicator Actions taken to relieve pain and provide comfort, defined as actions implemented by the nursing team to relieve the patient's pain/discomfort. Both maintained scores close to four and five, which according to the NOC scale, reveals high
satisfaction or complete satisfaction with the nursing interventions.

The clinical improvement of these scores points to the quality of care provided, which may be related to the use of the Nursing Process in all stages, which favors the nurse’s clinician and leads him to the elaboration of accurate nursing diagnoses, planning interventions and evaluating them according to the individual’s needs. It is known that patient satisfaction allows professionals to offer care that is adapted to the individual’s expectations, which is essential in the treatment of patients with chronic pain.

The results of this research showed a set of Nursing Outcomes and useful indicators for the evaluation of patients with ND Chronic Pain treated at an outpatient nursing consultation. Associated with this, the conceptual and operational definitions help in the reliability of the evaluation of the NOC outcomes and indicators. Regarding the limitations of this study, the decrease of the flow of patients in the consultation schedule during the study period was presented as a restrictive factor as well as the gap in scientific studies involving the applicability of the NOC for the assessment of Chronic Pain, in order to favor the discussion findings. Finally, it is emphasized that the NOC presents itself as a viable instrument for application in a real care setting, in order to qualify the Nursing Process and meet the current legislation that provides for evaluation methods for nursing actions in patient care.

CONCLUSIONS
It is informed that all authors contributed equally in the design of the research project, collection, analysis and discussion of data, as well as in the writing and critical review of the content with intellectual contribution and in the approval of the final version of the study.

CONFLICT OF INTERESTS
Nothing to declare.

REFERENCES
8. Martinez JE, Grassi DC, Marques LG. Analysis of the applicability of different pain


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