Chronic Pain: Nursing Diagnosis or Syndrome?

Diná Almeida Lopes Monteiro Cruz, PhD, MNS, RN, and Cibele Andrucioli Mattos Pimenta, PhD, MNS, RN

PROBLEM. *To explore the existence of a pattern of nursing diagnoses that represents a chronic pain syndrome.*

METHODS. *The nursing diagnoses of 68 oncologic and 46 nononcologic patients with chronic pain were submitted to univariate and multivariate analyses. Diagnoses ranked above the 75th percentile, without association with pain etiology, and presenting a pattern in cluster analyses and multidimensional scaling was accepted as possible components of chronic pain syndrome.*

FINDINGS. *The possible components of chronic pain syndrome were* disturbed sleep pattern,[a] constipation or risk for constipation, deficient knowledge,[a] impaired physical mobility, *and* anxiety/fear.

CONCLUSIONS. *Although a pattern of diagnoses has been proposed, confirmation will require further studies and the exploration of the clinical usefulness of the concept of chronic pain as a syndrome.*

PRACTICE IMPLICATIONS. *Increased skill in the assessment and understanding of chronic pain can result in improved relief strategies.*

Search terms: *Chronic pain, nursing diagnosis, pain*

Douleur chronique: Diagnostic infirmier ou syndrome?

PROBLÈME. *Explorer l'existence d'un regroupement de diagnostics infirmiers représentant le syndrome de douleur chronique (SDC).*

MÉTHODES. *Les diagnostics infirmiers présents chez 68 patients cancéreux et 46 patients non-cancéreux, souffrant de douleur chronique furent soumis à des analyses unidimensionnelles et multidimensionnelles. Les diagnostics qui furent retenus comme composantes possibles du SDC se situaient au dessus du 75e percentile, n'étaient pas associés à l'étiologie et représentaient un ensemble dans les analyses de regroupement et l'échelle multidimensionnelle.*

RÉSULTATS. *Les composantes possibles du SDC furent* perturbation des habitudes de sommeil, constipation ou risque de constipation, manque de connaissances, altération de la mobilité *et* anxiété / peur.

CONCLUSIONS. *Même si un schéma de diagnostics infirmiers a été proposé, il faudrait encore entreprendre plusieurs recherches et explorer l'utilité clinique du concept syndrome de douleur chronique, avant de confirmer la pertinence de ce syndrome.*

IMPLICATIONS PRATIQUES. *L'amélioration de l'évaluation et de la compréhension de la douleur chronique peut conduire à de meilleures stratégies pour soulager la douleur.*

Mots-clés: *Diagnostics infirmiers, douleur chronique, douleur*

[a]These labels represent new language incorporated into Taxonomy II (NANDA, 2001). At the time this study was done, the authors used the labels from Taxonomy I. Only the labels of selected diagnoses were revised from Taxonomy I to Taxonomy II. Diagnostic concepts and content were not changed.

Chronic Pain: Nursing Diagnosis or Syndrome?

テーマ： 慢性疼痛：看護診断あるいは症候群か

問 題： 慢性疼痛シンドローム（ＣＰＳ）を代表する看護診断のパターンの存在を探索すること

方法論： ６８名の癌患者および癌患者でない４６名からの<慢性疼痛>で、単変量解析と多変量解析を行った。ＣＰＳの構成要因として、５％以上を看護診断とし、また疼痛の病因を伴わない診断およびクラスター分析のパターンと、多次元尺度法の存在を容認した。

結 果： ＣＰＳの構成要因は、睡眠パターンの障害、便秘および便秘のリスク、知識の欠如、身体運動の障害、および不安／恐怖であった。

結 論： 看護診断のパターンは提案されたが、確証はさらなる研究と、症状としての慢性疼痛概念の臨床的有用性を探究する必要がある。

臨床的適応： アセスメント技術および慢性疼痛の理解の向上が、疼痛緩和の戦略を改善できる。

探索用語： 慢性疼痛、看護診断、疼痛

Dor crônica: Diagnóstico de enfermagem ou síndrome?

PROBLEMA. *Explorar a existência de um padrão de diagnósticos de enfermagem que represente uma síndrome de dor crônica.*
MÉTODOS. *Diagnósticos de enfermagem de 68 pacientes com dor crônica oncológica e 46 pacientes com dor crônica não oncológica foram submetidos a análises univariadas e multivariadas. Os diagnósticos posicionados acima do Percentil 75, sem associação com a etiologia da dor e que apresentaram um padrão na Análise de Cluster e no Escalonamento Multidimensional foram aceitos como possíveis componentes da síndrome de dor crônica.*
RESULTADOS. *Os possíveis componentes da síndrome de dor crônica foram: distúrbio do padrão de sono, constipação ou risco para constipação, déficit de conhecimento, mobilidade física prejudicada e ansiedade/medo.*
CONCLUSÕES. *Apesar de um padrão de diagnósticos ter sido proposto, a sua confirmação requer outros estudos e a exploração da utilidade clínica de se conceituar a dor crônica como uma síndrome.*
IMPLICAÇÕES PRÁTICAS. *Melhorar a compreensão e as habilidades na avaliação da dor crônica pode resultar em melhores estratégias de alívio.*
Palabras para busca: *Dor crônica, diagnóstico de enfermagem, dor*

Dolor crónico: ¿Diagnóstico enfermero o síndrome?

PROBLEMA. *Explorar la existencia de un patrón diagnóstico de enfermería que represente el síndrome de dolor crónico (SDC).*

MÉTODOS. *Los diagnósticos enfermeros de 68 pacientes oncológicos y 46 no-oncológicos con dolor crónico, se sometieron a análisis variable y multivariable. Se aceptaron como posibles componentes del SDC, los diagnósticos que estaban sobre el percentil 75, sin asociación con etiología de dolor y que presentaban un patrón agrupado al hacer el análisis y en la escala multidimensional.*

RESULTADOS. *Los posibles componentes de SDC fueron alteración del patrón del sueño, estreñimiento o riesgo de estreñimiento, déficit de conocimientos, trastorno de la movilidad física y ansiedad/temor.*

CONCLUSIONES. *Aunque un patrón de diagnósticos ha sido propuesto, la confirmación requerirá que se llevan más allá los estudios y la exploración de la utilidad clínica del concepto del dolor crónico, como un síndrome.*

IMPLICACIONES PARA LA PRÁCTICA. *Mejorar la habilidad en la valoración y comprensión del dolor crónico pueden producir mejoras en las estrategias de alivio.*

Términos de búsqueda: *Diagnóstico enfermero, dolor, dolor crónico*

Diná Almeida Lopes Monteiro Cruz, PhD, MNS, RN, and Cibele Andrucioli Mattos Pimenta, PhD, MNS, RN, are Associate Professors, Nursing School, University of São Paulo, Brazil.

In 1991, McCourt, concerned about proposed diagnostic labels containing the term "syndrome," suggested some elements as attributes of the syndrome concept in the context of nursing diagnosis classification. The elements proposed were that the syndromes (a) represent a cluster of nursing diagnoses; (b) be labeled to give clue to the cause; (c) have emotional, social, and physical components; (d) have initial and long-term phases; and (e) represent complex clinical conditions requiring expert nursing assessment and expert nursing interventions. Gordon (1994) and Lunney (1997) wrote that syndrome would be the suitable term to describe a multidimensional condition, requiring an expression that would not reduce it into its component parts, states, or processes. The significance of syndrome in the disciplines of health in general, and medicine in particular, is still not clear (McCourt; Coler, 1996).

This descriptive study explores the idea that chronic pain is the nucleus around which other nursing diagnoses are associated, thus characterizing a syndrome.

Chronic Pain

The defining characteristics of *pain* and *chronic pain* diagnoses accepted by the North American Nursing Diagnosis (NANDA, 1996) involve different levels of inference from conditions presented. Corrêa and Cruz (2000) researched the pain indicators in specialized literature and observed that in addition to verbalization of pain and arterial pressure alterations, there are indicators such as anxiety and hopelessness. The inferences needed to identify pain and arterial pressure alterations are simpler than those needed to affirm whether the patient is anxious or hopeless.

Anxiety and *hopelessness* are responses accepted as nursing diagnoses by NANDA (1996), which leads to the question: Can we accept as an answer a diagnosis that

includes other diagnoses among its indicators? In response, some possibilities must be discussed. First, the validation studies indicate that responses such as hopelessness and anxiety are not necessarily defining characteristics of chronic pain; and second, the best way to consider chronic pain would be not as a diagnosis, but as a syndrome, as suggested by Simon (1997) and accepted as a possibility by Lunney (1997).

Syndrome or Diagnosis

To be a diagnosis, syndrome, or a related factor involves conceptual discussions that could have clinical repercussions. Simon (1997) raised the issue of whether it would be more appropriate to describe pain as a diagnosis or as a related factor of other responses, considering which could provide the best direction for nursing interventions. She also questioned the suitability of indicating other responses related to pain, for example, *disturbed sleep pattern*,[a] *ineffective coping*, and *activity intolerance*, as a list of separate diagnoses. These types of responses are frequently associated with chronic pain. The term "chronic pain syndrome" was suggested to express a cluster of responses.

Agreeing with the suggestions from Simon (1997), Lunney (1997) presented arguments in the defense of the designation of *chronic pain* as a syndrome as being the best option. These arguments were twofold: (a) the use of the term syndrome could favor the description of pain experience more completely; and (b) the capacity of short-term memory is limited, which increases the probability of forgetting or ignoring data as the quantity increases. The concept of *chronic pain* as a syndrome would avoid the need to point out each associated diagnosis.

Syndromes nearly always occur as a group of related problems, as opposed to other diagnoses that represent a cluster of signs (Gordon, 1994). In general, both diagnoses and syndromes are groups of manifestations, the difference being that syndromes are characterized as a group of "units" of manifestations more complex than the units of manifestations of other diagnoses.

Chronic pain is frequently designated as a syndrome. The definition of the syndrome of *chronic pain* accepted by the International Association for the Study of Pain (IASP) is a "diagnosis that usually implies a persistent pattern of pain that may have arisen from organic causes but which is now compounded by psychological and social problems in behavioral changes" (Merskey & Bogduk, 1994, p. xiii). It seems that there are no contradictions between the ideas regarding syndromes proposed by McCourt (1991) and the IASP definition of chronic pain.

In the context of nursing, proposing the transformation of *chronic pain* into chronic pain syndrome, not only as a label but also as a way to conceive the experience of prolonged pain, will help nurses to base their interventions on a holistic sense rather than on interventions based on individual diagnoses, just as Coler (1996) argued when proposing a nursing syndrome for patients with AIDS. If *chronic pain* is described as a syndrome, the outcomes evaluation also should be based primarily on the evolution of each diagnosis in the syndrome rather than on modifications in the intensity and quality of pain.

The definition of the group of diagnoses with the capacity to represent the syndrome of chronic pain could guide the training of professionals in chronic pain care. The teaching content of diagnostic process assessment and the process of outcomes evaluation would have as their base the diagnoses represented by the syndrome.

To achieve the potential benefits of considering *chronic pain* as a syndrome, it is necessary to seek evidence that *chronic pain* corresponds to the concept of "syndrome." The first attribute of a syndrome as a nursing diagnosis manifests when it is a cluster of nursing diagnoses (McCourt, 1991). We associate this attribute to the requisite that this cluster of nursing diagnoses is a pattern in chronic pain. To accept a cluster of nursing diagnoses as a pattern, it is necessary that this cluster occur consistently in patients with *chronic pain* regardless of other pain characteristics. Considering these attributes of syndrome, this study aimed to identify a possible pattern of the diagnostic components of chronic pain syndrome.

[a]Label revised per Taxonomy II.

Methods

Sample

The sample consisted of 114 patients with chronic pain referred for nursing care to a multidisciplinary center for chronic pain treatment at an academic hospital in São Paulo, Brazil, between May 1995 and February 1998. All the patients had been suffering with pain for at least three months.

Data Collection

The data to allow identification of diagnoses were collected through interviews and physical examinations guided by an instrument based on the Human Response Patterns proposed by NANDA (Cruz & Pimenta, 1998). In order to assess the sensory pattern, the intensity of pain was indicated by a numeric scale of 0 to 10, where 0 = no pain whatsoever and 10 = the worst pain imaginable (McCaffery, 1999). To characterize the quality of the pain, the instrument included the McGill Pain Questionnaire (Melzack & Wall, 1999; Pimenta & Teixeira, 1996). Data regarding the etiology of pain were obtained from physician records. The data collection was undertaken at nursing admission of patients to the hospital.

Data Analysis

The data registered at nursing admission were analyzed by the authors who formulated the nursing diagnoses. Diagnoses were included in this study only when both authors were in full agreement. The frequencies of the diagnoses were organized in three groups: oncology patients, nononcology patients, and the entire sample. Data were analyzed using the criteria that to be considered as a component of chronic pain syndrome, additional diagnoses besides *chronic pain* must have (a) the frequency of occurrence above the 75th percentile in at least one of the groups according to pain etiology or in the total sample (high-frequency diagnoses), and (b) no significant statistical differences in frequency according to pain etiology (oncology/nononcologic). The chi-square or Fisher test was applied to analyze the second condition.

The first criterion could guarantee that important diagnoses in each of the two groups, according to pain etiology, were not eliminated. The second criterion was determined because if any diagnosis is associated with pain etiology, its occurrence depends more on chronic pain etiology than on the pain itself.

The authors sought evidence of the existence of a composite of diagnoses that co-occur independently of the variables: gender, etiology (oncology or nononcology), pain intensity (0–4, >4–<8, >8–10), and of predominance of pain verbal descriptor. The predominance of pain verbal descriptor was defined as a ratio between the proportion of sensorial to affective descriptors chosen by the patient in the McGill Pain Questionnaire. Patients with a ratio of less than 0.8 were classified as patients with predominant affective description. Those with a value above 1.2 were classified with predominant sensorial description. Patients with values between 0.8 and 1.2 were classified in an intermediate group.

Techniques of multidimensional scaling and cluster analysis (CA) were applied to the diagnoses' frequencies in order to verify the existence of a pattern of diagnoses among the clusters provided by the techniques.

Multidimensional scaling procedures are designed to "determine which particular characteristics are most important in discerning the pattern in similarity judgments out of a set of plausible defining features" (Grimm & Yarnold, 1995, p. 138). CA is a "technique for grouping individuals or objects into clusters so that objects in the same cluster are more similar to one another than they are to objects in other clusters" (Hair, Anderson, Tatham, & Black, 1995, p. 421). The techniques of multidimensional scaling and CA are equivalent and evaluate the correlation among the diagnoses, analysing the distances between them, which, in turn, are calculated by means of their frequencies.

The results obtained by percentiles and association analyses were compared to the results obtained by multidimensional scaling and CA procedures. The coinciding of results between the two sets of analyses would suggest greater reliability in the cluster of diagnoses.

Table 1. Sample Characteristics

Characteristics	Pain Etiology		
	Cancer (n = 68)	Noncancer (n = 46)	Total (N = 114)
Age (years)			
▪ Range	25–91	19–79	19–91
▪ Mean (*SD*)	57.1 (13.4)	47.2 (15.9)	53.1 (15.2)
▪ Median	58	45	53
Gender			
▪ Female	31 (46%)	31 (67%)	62 (54%)
▪ Male	37 (54%)	15 (33%)	52 (46%)
Education (years)			
▪ Range	0–15	0–17	0–17
▪ Mean (*SD*)	4.3 (3.5)	6.9 (4.9)	5.4 (4.4)
▪ Median	4	6.5	4

Results

Sample Characteristics

The sample consisted of 114 patients with chronic pain, with 68 (60%) having cancer pain and 46 (40%) having noncancer (myofascial, neuropathic, and others) pain. Some characteristics of the group, according to the pain etiology, are presented in Table 1.

Nursing Diagnoses According to Chronic Pain Etiology

Table 2 shows the occurrence of diagnoses according to the etiology of pain and the resultant p values. Some diagnostic categories were grouped: *constipation* and *risk for constipation; Imbalanced nutrition: less than body requirements* and *risk for imbalanced nutrition; anxiety* and *fear; impaired social interaction* and *social isolation; disturbed thought processes, confusion,* and *impaired memory.* These groupings were based on the similarities of the diagnoses and to reduce the number of categories to facilitate the application of statistical tests. Thirty-four categories of nursing diagnoses were identified, 32 for patients with cancer pain and 31 for patients with noncancer pain.

Among the 114 patients, 544 nursing diagnoses were identified. Patients with cancer pain had 353 diagnoses (range: 1–12, median: 5.2) and with noncancer pain 191 (range: 1–9, median: 4.1). The Mann-Whitney U test applied to the number of diagnoses per patient according to the pain etiology produced these results: U = 1173, z = 2.3, p = .01. With an alpha level of .05, the frequency of nursing diagnoses was statistically higher for patients with cancer pain.

Of the 34 diagnostic categories, 5 had frequencies that were statistically higher among patients with cancer pain: *imbalanced nutrition: less than body requirements/risk for imbalanced nutrition* (p = .00), *disturbed sensory perception (gustatory)* (p = .02), *risk for aspiration* (p = .01), *impaired swallowing* (p = .02), *disturbed thought processes/confusion/impaired memory* (p = .02). *Ineffective sexuality patterns* had a higher frequency for patients with noncancer pain (p = .02).

Components of Chronic Pain Syndrome

Table 3 shows the high-frequency diagnoses (i.e., those positioned above the 75th percentile) for the patients with cancer pain, the patients with noncancer pain, and for the entire sample. Out of nine high-frequency diagnoses, three were significantly associated with chronic pain etiology: *imbalanced nutrition: less . . . /risk for imbalanced nutrition, disturbed sensory perception (gustatory),* and *ineffective sexuality patterns.* Six diagnoses could be considered components of chronic pain syndrome: *constipation/risk for constipation, disturbed sleep pattern, impaired physical mobility, deficient knowledge, anxiety/fear,* and *activity intolerance.*

Multidimensional scaling and cluster analyses were performed to identify a cluster of diagnoses not influenced by variables: gender, etiology, pain intensity, and predominance of pain verbal descriptor. The results of Table 3 were compared to the results of multidimensional scaling and CA.

In all the analyses, according to the variables chosen, many diagnoses were strongly associated, forming a

Table 2. Frequency of Nursing Diagnoses According to Pain Etiology and *p* Values (chi-square or Fisher test)

Diagnostic Category	Frequency				Total	*p* Values
	Cancer (n = 68)		Noncancer (n = 46)			
	n	%	*n*	%	*N*	
1. Constipation or risk for constipation	61	90	42	91	103	0.97
2. Disturbed sleep pattern	39	57	29	63	68	0.54
3. Imbalanced nutrition: less than body requirements/Risk for altered nutrition	31	46	9	20	40	0.00
4. Deficient knowledge	25	37	11	24	36	0.06
5. Impaired physical mobility	18	27	16	35	34	0.34
6. Anxiety/Fear	19	28	10	22	28	0.56
7. Disturbed sensory perception	17	25	3	7	20	0.02
8. Self-care deficit	12	18	6	13	18	0.5
9. Activity intolerance	11	16	7	15	18	0.89
10. Ineffective coping	10	15	6	13	16	0.06
11. Impaired urinary elimination	12	18	4	9	16	0.17
12. Powerlessness	9	13	5	11	14	0.14
13. Fatigue	7	10	6	13	13	0.21
14. Ineffective sexuality patterns	3	4	8	17	11	0.02
15. Risk for impaired skin integrity	8	12	1	2	9	0.06
16. Ineffective therapeutic regimen management	7	10	2	4	9	0.21
17. Risk for aspiration	8	12	–	–	8	0.01
18. Impaired skin integrity	7	10	1	2	8	0.09
19. Impaired verbal communication	7	10	1	2	8	0.09
20. Impaired swallowing	7	10	–	–	7	0.02
21. Risk for infection	6	9	1	2	7	0.14
22. Impaired social interaction/Social isolation	2	3	4	9	6	0.17
23. Disturbed thought processes/ Confusion/Impaired memory	6	7	–	–	6	0.04
24. Risk for trauma	2	3	4	9	6	0.17
25. Diarrhea	3	4	2	4	5	0.67
26. Urinary incontinence	4	6	1	2	5	0.32
27. Risk for deficient fluid volume	2	3	2	4	4	0.53
28. Self-esteem disturbance	1	2	3	7	4	0.17
29. Excess fluid volume	3	4	1	2	4	0.46
30. Hopelessness	3	4	1	2	4	0.46
31. Imbalanced nutrition: more than body requirements	1	2	2	4	3	0.35
32. Ineffective airway clearance	2	3	1	2	3	0.64
33. Delayed growth and development	–	–	1	2	1	0.4
34. Ineffective tissue perfusion (peripheral)	–	–	1	2	1	0.4
Total	353[a]		191[b]		544	

[a]mean: 5.2 (2.39)
[b]mean: 4.1 (1.96)

Table 3. Diagnoses Above the 75th Percentile According to Pain Etiology and for the Total Sample

	Cancer	Noncancer	Total
1.	Constipation or risk for	Constipation or risk for	Constipation or risk for
2.	Disturbed sleep pattern	Disturbed sleep pattern	Disturbed sleep pattern
3.	Imbalanced nutrition: less or risk for[a]	Impaired physical mobility	Imbalanced nutrition: less or risk for[a]
4.	Deficient knowledge	Deficient knowledge	Deficient knowledge
5.	Anxiety/Fear	Anxiety/Fear	Impaired physical mobility
6.	Impaired physical mobility	Imbalanced nutrition: less or risk for[a]	Anxiety/Fear
7.	Disturbed sensory perception (gustatory)[a]	Imbalanced sexual patterns[a]	Disturbed sensory/perception (gustatory)
8.		Activity intolerance	

[a]Difference of the frequency between cancer and noncancer pain statistically significant (alpha .05).

"strong big cluster." Other diagnoses were considerably distanced, indicating they are not a part of "big cluster." These distant diagnoses were different from the others and need to be further analyzed. Analyzing the results of the multidimensional scaling and cluster analysis, the strong big cluster had different content among the variables (pain characteristics and gender) and the most distanced diagnoses were almost always the same. There was a pattern of the distant nursing diagnoses according to the variables. The diagnoses *disturbed sleep pattern* and *constipation/risk for constipation* were the most distant in all situations; less distant were *deficient knowledge, impaired physical mobility, anxiety/fear,* and *imbalanced nutrition/risk for imbalanced nutrition.* These diagnoses were differentiated independent of gender, etiology, intensity, and quality of pain, suggesting they characterize a pattern in chronic pain.

Table 4 shows the possible components of chronic pain syndrome according to the positions and differences in frequencies according to pain etiology, and according to the multidimensional scaling and CA techniques.

Multidimensional scaling and cluster analysis confirmed five of the six diagnoses of chronic pain syndrome according to the criteria of high frequency and association with pain etiology. Only *activity intolerance* was unconfirmed. Multidimensional scaling and CA techniques pointed out *imbalanced nutrition: less than body requirements/risk for imbalanced nutrition* as possible components of chronic pain syndrome. These diagnoses did not meet the criteria regarding high frequency and association with pain etiology.

Discussion

Chronic pain represents a cluster of nursing diagnoses. Thirty-four different diagnostic categories were identified from 114 subjects. The presupposition that some diagnostic categories depend on other variables and not

Table 4. Possible Components of Chronic Pain Syndrome

		Set of Analyses	
	Diagnoses	**Percentiles and Association Test[a]**	**Multidimensional Scaling and Cluster Analysis**
1.	Constipation or risk for	Yes	Yes
2.	Disturbed sleep pattern	Yes	Yes
3.	Deficient knowledge	Yes	Yes
4.	Impaired physical mobility	Yes	Yes
5.	Anxiety/Fear	Yes	Yes
6.	Activity intolerance	Yes	No
7.	Imbalanced nutrition: less or risk for[a]	No	Yes

[a]Frequency positioned above 75th percentile and chi-square or Fisher test $p \leq .05$ (cancer/noncancer pain)

just chronic pain guided the analyses of diagnoses for the identification of a core cluster of diagnoses of patients with chronic pain. The frequencies of 6 of the 34 diagnoses were significantly associated with pain etiology. This association with pain etiology shows that these categories are less stable than those with frequencies not associated with pain etiology.

The chosen criteria to indicate whether the diagnosis could be a component of chronic pain syndrome were positioning above the 75th percentile (high-frequency diagnoses) in at least one of the groups according to pain etiology or in the total sample, and a frequency not statistically different between cancer and noncancer pain. Of the 34 diagnoses, 9 were of high frequency and 3 had a frequency statistically different between patients with cancer and noncancer pain. As such, 6 diagnoses met the criteria regarding frequency and association with pain etiology: *constipation/risk for constipation, disturbed sleep pattern, impaired physical mobility, deficient knowledge, anxiety/fear,* and *activity intolerance.*

Multidimensional scaling and CA techniques allowed the identification of a cluster of diagnoses that remained stable when related to gender, etiology, intensity, and quality of pain. Five of the six diagnoses of this cluster coincided with those identified in the analysis of frequency and association. There was no agreement between the two sets of analyses with regard to activity intolerance.

These results suggest that chronic pain syndrome represents a cluster of nursing diagnoses: *disturbed sleep pattern, constipation/risk for constipation, deficient knowledge, anxiety/fear,* and *impaired physical mobility. Activity intolerance* and *imbalanced nutrition: less than body requirements/risk for imbalanced nutrition* need further investigation for acceptance or rejection in the cluster that represents chronic pain syndrome.

The cluster of diagnoses composing chronic pain syndrome has emotional, social, and physical components, and represents complex clinical conditions requiring expert nursing assessment and expert nursing interventions. These are other factors proposed by McCourt

(1991) as attributes of the syndrome concept in the context of classification of nursing diagnosis.

Limitations

The accuracy of interpreting human response patterns is a challenge for clinical practice and for nursing research (Lunney, Karlik, Kiss, & Murphy, 1997). The diagnostic process is basically a process of making inferences. There is evidence that the accuracy of those inferences is influenced by various factors: the situational context, the nature of the diagnostic task, and characteristics of the diagnostician (Carnevali & Thomas, 1993; Lunney, 1992).

The authors of this study tried to minimize biases discussing the data in order to reach a consensus in the acceptance of the diagnostic statements. In any case, the control of all the possible factors influencing the diagnostic process for research purposes is still difficult. Other studies will be required with different samples to accumulate results that can consistently support the idea of a chronic pain syndrome and discriminate its content.

Simon (1996) draws our attention to her experience of *ineffective coping* as a response frequently identified in patients with chronic pain. In the present study, *ineffective coping* occurred in patients with both cancer pain and noncancer pain but with a frequency between 50th and 75th percentiles. At least three explanations are possible: Simon's report is founded on the authors' clinical experience without more precise systematic observation; it is possible that the instrument and procedures of collecting data used in this study were limited in regard to identification of the defining characteristics of *ineffective coping*, or even that the authors who formulated the diagnoses made incorrect interpretations; or the choice of the 75th percentile as a cutoff mark is not adequate to comprehend the diversity of responses that a possible chronic pain syndrome contains. This latter limitation could be minimized by changing the cutoff point. The replication of the same study controlling other characteristics of chronic pain and the study of a model of acute pain could sustain or negate the configuration of chronic pain as syndrome, according to McCourt's (1991) assumptions.

The advances in validation studies of nursing diagnoses and the development of clinical experience in the collection and interpretation of patient data are factors that could minimize certain limitations in studies such as this. Methodologic research regarding the reliability of nursing diagnosis statements will contribute to the development of the nursing diagnoses research in general.

Acknowledgments. This research was partially supported by the Conselho Nacional para o Desenvolvimento Científico e Tecnológico (# 522345/95.6). The Fundação de Amparo à Pesquisa do Estado de São Paulo supported (#00-00907/6) the presentation of this paper at the 14th NANDA Conference. The authors acknowledge Rogerie Brauns and Andris Brauns for supporting the English version of the manuscript.

Author contact: MTMLLF@usp.br, with a copy to the Editor: rose_mary@earthlink.net

References

Carnevali, D.L., & Thomas, M.D. (1993). *Diagnostic reasoning and treatment decision making in nursing*. Philadelphia: Lippincott.

Coler, M. (1996). PERC: A nursing syndrome for AIDS. *Nursing Diagnosis, 7*, 19–23.

Corrêa, C.G., & Cruz, D.A.L.M. (2000). Pain: Clinical validation with postoperative heart surgery patients. *Nursing Diagnosis, 11*, 5–14.

Cruz, D.A.L.M., & Pimenta, C.A.M. (1998). Avaliação do doente com dor crônica em consulta de enfermagem: proposta de instrumento segundo diagnósticos de enfermagem [Evaluation of patients with chronic pain in nursing consultations: Proposal of an instrument according to nursing diagnoses]. *Revista Latino-Americana de Enfermagem, 7*(3), 49–62.

Gordon, M. (1994). *Nursing diagnosis: Process and application* (3rd ed.). St. Louis: Mosby.

Grimm, L.G., & Yarnold, A.P. (1995). *Reading and understanding multivariate statistics*. Washington, DC: American Psychological Association.

Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1995). *Multivariate data analysis* (4th ed.) Englewood Cliffs, NJ: Prentice Hall.

Lunney, M. (1992). Divergent productive thinking factors and accuracy of nursing diagnoses. *Research in Nursing and Health, 15*, 312–317.

Lunney, M. (1997). Commentary. *Nursing Diagnosis, 8*, 38–39.

Lunney, M., Karlik, B.A., Kiss, M., & Murphy, P. (1997). Accuracy of nurses' diagnoses of psychosocial responses. *Nursing Diagnosis, 8,* 157–166.

McCaffery, M. (1999). *Pain: Clinical manual* (2nd ed.). St Louis: Mosby.

McCourt, A. (1991). Syndromes in nursing: A continuing concern. In R.M. Carroll-Johnson & M. Paquette (Eds.), *Proceedings of the ninth conference* (pp. 79–82). Philadelphia: Lippincott.

Melzack, R., & Wall, P.D. (1999). *Textbook of pain* (4th ed.). Philadelphia: Saunders.

Merskey, H., & Bogduk, N. (Eds.). (1994). *Classification of chronic pain: Descriptions of pain syndromes and definitions of pain terms* (2nd ed.). Seattle: IASP Press.

North American Nursing Diagnosis Association. (1996). *NANDA nursing diagnoses: Definitions and classification 1996–1997.* Philadelphia: Author.

North American Nursing Diagnosis Association. (2001). *NANDA nursing diagnoses: Definitions and classification 2001–2002.* Philadelphia: Author.

Pimenta, C.A.M., & Teixeira, M.J. (1996). Proposta de adaptação do questionário de dor McGill para a língua portuguesa [Proposal of McGill Pain Questionnaire adaptation to Portuguese language]. *Revista da Escola de Enfermagem da USP, 30,* 473–483.

Simon, J.M. (1996). Chronic pain syndrome: Nursing assessment and intervention. *Rehabilitation Nursing, 21*(1), 13–19.

Simon, J.M. (1997). Chronic pain: Diagnosis, etiology, or syndrome? *Nursing Diagnosis, 8,* 37–38.