




DISTURBED SLEEP PATTERN (000198): CONTENT ANALYSIS IN PATIENTS WITH ACUTE CORONARY SYNDROME

Juliana Prado Biani Manzoli¹ 

Fábio Luis Montanari^{2,3} 

Luciana Aparecida Costa Carvalho^{2,3} 

Raisa Camilo Ferreira^{3,4} 

Elaine Ribeiro³

Erika Christiane Marocco Duran³ 

¹Prefeitura Municipal de Paulínia. Paulínia, São Paulo, Brasil.

²Hospital das Clínicas da Universidade Estadual de Campinas. Campinas, São Paulo, Brasil.

³Universidade Estadual de Campinas, Programa de Pós-Graduação da Faculdade de Enfermagem. Campinas, São Paulo, Brasil.

⁴Centro Universitário de Itapira. Itapira, São Paulo, Brasil.

ABSTRACT

Objective: to analyze the content of the defining characteristics of the Disturbed Sleep Pattern Nursing Diagnosis (00198) in patients with Acute Coronary Syndrome.

Method: content analysis performed by specialists who achieved a score equal to or greater than five, according to established criteria: clinical experience, teaching and/or research; participation in research groups; doctorate degree; master's degree; specialization and/or residency in cardiology and/or sleep and/or nursing classifications. Eight defining characteristics were evaluated for their relationship to population, relevance, clarity and accuracy. Descriptive statistics were performed to characterize the sample, binomial statistical test to establish if there is agreement between the experts and chi-square and Fisher's exact to establish associations between the evaluated items and the experts' variables.

Results: 54 experts participated in the study. The defining characteristics validated by the experts were the following: dissatisfaction with sleep, feeling unrested, sleep deprivation, alteration in sleep pattern, unintentional awakening, difficulty initiating sleep and daytime sleepiness. There was a statistically significant association between evaluated items and the variables time of training, time of operation and punctuation.

Conclusion: seven of the eight defining characteristics were considered valid after the application of binomial test. This study will contribute to the refinement of the Disturbed Sleep Pattern Nursing Diagnosis (000198) and may enable the improvement of the quality of care of patients hospitalized with Acute Coronary Syndrome regarding changes in sleep pattern. The content analysis stage will support the next stage of the validation process of the present diagnosis, the clinical validation.

DESCRIPTORS: Sleep. Acute coronary syndrome. Nursing diagnosis. Nursing process. Coronary care units. Validation studies.

HOW CITED: Manzoli JPB, Montanari FL, Carvalho LAC, Ferreira RC, Ribeiro E, Duran ECM. Disturbed sleep pattern (000198): content analysis in patients with acute coronary syndrome. *Texto Contexto Enferm* [Internet]. 2020 [cited YEAR MONTH DAY]; 29:e20180345. Available from: <http://dx.doi.org/10.1590/1980-265X-TCE-2018-0345>

PADRÃO DE SONO PREJUDICADO (000198): ANÁLISE DE CONTEÚDO EM PACIENTES INTERNADOS COM SÍNDROME CORONARIANA AGUDA

RESUMO

Objetivo: analisar o conteúdo das características definidoras do Diagnóstico de Enfermagem Padrão de Sono Prejudicado (00198) em pacientes com Síndrome Coronariana Aguda.

Método: análise de conteúdo realizada por especialistas que atingiram pontuação igual ou maior a cinco, de acordo com critérios estabelecidos: experiência clínica, no ensino e/ou pesquisa; participação em grupos de pesquisa; doutorado; mestrado; especialização e/ou residência em cardiologia e/ou sono e/ou classificações de enfermagem. Oito características definidoras foram avaliadas quanto a sua relação com a população, relevância, clareza e precisão. Realizou-se estatística descritiva para caracterização da amostra, teste estatístico binomial para estabelecer se há concordância entre os especialistas e qui-quadrado e exato de Fisher para estabelecer associações entre os itens avaliados e variáveis dos especialistas.

Resultados: 54 especialistas participaram do estudo. As características definidoras validadas pelos especialistas foram: insatisfação com o sono, não se sentir descansado, privação do sono, alteração do padrão de sono, despertar não intencional, dificuldade para iniciar o sono e sonolência diurna. Houve associação estatística significativa entre itens avaliados e as variáveis tempo de formação, tempo de atuação e pontuação.

Conclusão: sete das oito características definidoras foram consideradas válidas após aplicação de teste binomial. O presente estudo contribuirá para o refinamento do Diagnóstico de Enfermagem Padrão de Sono Prejudicado (000198) e poderá possibilitar a melhoria da qualidade do atendimento de pacientes internados com Síndrome Coronariana Aguda no que tange a alterações do padrão de sono. A etapa de análise de conteúdo subsidiará a próxima etapa do processo de validação do presente diagnóstico, a validação clínica.

DESCRITORES: Sono. Síndrome coronariana aguda. Diagnóstico de enfermagem. Processo de enfermagem. Unidades de cuidados coronarianos. Estudos de validação.

PATRÓN DE SUEÑO PERJUDICADO (000198): ANÁLISIS DE CONTENIDO EN PACIENTES INTERNADOS CON SÍNDROME CORONARIO AGUDO

RESUMEN

Objetivo: analizar el contenido de las características definidoras del Diagnóstico de Enfermería de Patrón de Sueño Perjudicado (00198) en pacientes con Síndrome Coronario Agudo.

Método: análisis de contenido realizado por especialistas que obtuvieron una puntaje mayor o igual a cinco, de acuerdo con los criterios establecidos: experiencia clínica, en docencia y/o en investigación; participación en grupos de investigación; doctorado; maestría; especialización y/o residencia en cardiología y/o en clasificaciones de enfermería. Se evaluaron ocho características definidoras en cuanto a su relación con la población, relevancia, claridad y precisión. Se realizó un análisis estadístico descriptivo para caracterizar la muestra, una prueba estadística de binomios para establecer si había concordancia entre los especialistas y las pruebas de chi-cuadrado y exacto de Fisher para establecer asociaciones entre los puntos evaluados y las variables de los especialistas.

Resultados: del estudio participaron 54 especialistas. Las características definidoras que evaluaron los especialistas fueron las siguientes: insatisfacción con el sueño, no sentirse descansado, privación del sueño, alteración en el patrón de sueño, despertar no intencional, dificultad para iniciar el sueño y somnolencia diurna. Se registró una asociación estadística significativa entre los puntos evaluados y las siguientes variables: tiempo de formación, tiempo de ejercicio en la profesión y puntuación.

Conclusión: siete de las ocho Características definidoras se consideraron válidas después de aplicar la prueba de binomios. El presente estudio contribuirá a perfeccionar el Diagnóstico de Enfermería de Patrón de Sueño Perjudicado (000198) y podrá hacer posible que se mejore la calidad de la atención de pacientes internados con Síndrome Coronario Agudo en lo referente a alteraciones en el patrón de sueño. La etapa del análisis de contenido servirá de ayuda para la próxima etapa del proceso de validación del presente diagnóstico: la validación clínica.

DESCRITORES: Sueño. Síndrome coronario agudo. Diagnóstico de enfermería. Proceso de enfermería. Unidades de cuidados coronarios. Estudios de validación.



INTRODUCTION

The Nursing Process (NP) is a methodological tool that guides the professional practice, as well as its documentation. This tool can be operationalized through the Nursing Care Systematization (NCS). It consists of five interdependent stages: history, diagnosis, planning, implementation and evaluation of nursing, which must be performed in a systematic and deliberate manner.¹

The second stage of the NP, the Nursing Diagnosis (ND), consists in the clinical judgment of human responses, focusing on either a problem, a state of health promotion or potential risk. This stage supports the therapeutic decision making process, providing support for choosing appropriate interventions to achieve expected results.¹⁻²

The ND classification of the North American Nursing Diagnosis Association International, Inc. (NANDA-I) is the most adopted language in Brazil by nurses to name such human responses, establishing the classification of the NDs in domains and classes. It contains the NDs and their definitions, Defining Characteristics (DCs) or clinical indicators, Related Factors (RF) or contributing factors, Populations at risk, and Associated conditions.²

To determine an ND, the nurse must identify these clinical indicators and contributing factors, establishing the clinical reasoning; however, this cognitive experience often leads this professional to varied clinical situations³⁻⁴ and this process can become complex and unclear, making decision making difficult.

In order to base the judgment and clinical reasoning of the nurse, conferring scientificity and increasing the quality of care to the individual, family and community, ND validation studies were developed to minimize the variability of judgment of clinical situations, enabling a more accurate identification of the ND,³⁻⁴ legitimize and refine it, making it true for a given population and clinical situation by identifying clinical indicators.⁵ Thus, to perform ND validation studies, some stages are recommended, including content analysis.³

Content analysis considers the opinion of specialist nurses regarding a particular ND, its DCs and RFs.³ It helps to make the assessment of a particular ND decisive, safe, accurate and valid for cohesive decision making.⁶

Among the various NDs listed in the NANDA-I ND classification is the Disturbed Sleep Pattern (00198). This ND was inserted in this classification in 1980, and modified in 1998, 2006, 2014 and 2017. It belongs to Domain 4 - Activity and Rest, Class 1 - Sleep and Rest and is defined as "time-limited interruptions of sleep amount and quality due to external factors".^{7:202}

Its DCs are alteration in sleep pattern, unintentional awakening, difficulty in daily functioning, difficulty initiating sleep, dissatisfaction with sleep and feeling unrested. The RFs for this ND include "environmental barrier (ambient noise, daylight/darkness exposure, ambient temperature/humidity, unfamiliar setting), immobilization, disruption caused by sleep partner, non-restorative sleep pattern (due to caregiver responsibilities, parenting practices, sleep partner) and insufficient privacy."^{7:202}

Several studies⁸⁻¹¹ point to the presence of this ND in patients hospitalized with Acute Coronary Syndrome (ACS). This syndrome is characterized by acute manifestations of myocardial ischemia, with clinical and laboratory alterations and is classified as Unstable Angina (UA) and Acute Myocardial Infarction (AMI) with or without ST elevation.¹²

A study that sought to assess sleep in patients with coronary artery bypass grafting using the Pittsburgh Sleep Quality Index (PSQI) found that the highest PSQI scores were in patients with recent AMI, with worse scores for quality, efficiency, sleep latency and duration. Also the elevation of the angina scores correlated with sleep duration and its disorders, as well as one of the main predictors of poor sleep quality.⁸

Still in a study that evaluated the night sleep of patients hospitalized with ACS, it was observed that their sleep architecture in the acute phase of the disease was clearly worse, presenting changes in sleep architecture and microarchitecture, in which the total sleep time decreased, decreased sleep efficiency, increased excitability and decreased slow-wave sleep and REM sleep.⁹

The Disturbed Sleep Pattern ND was listed in 10 (38.5%) of the 26 (100%) cardiac patients evaluated, in their mediate postoperative period.¹⁰ And also in another study, in 17 (85%) patients with AMI.¹¹

Poor quality and quantity of sleep can bequeath the individual various organic changes, such as obesity,¹³ diabetes,¹⁴ as well as cardiovascular disease,¹⁵ cerebrovascular¹⁶ and risk of death.¹⁷

Sleep is characterized by the temporary and reversible detachment of the individual from the environment, is complex, physiological and developed in recurrent stages. It presents in two states: Non-Rem sleep (NREM), that is, non-rapid eye movements which is divided into N1, N2 and N3, with N3 being the most profound, associated with the deep reduction of the sympathetic activities, the so-called restorative sleep; and REM sleep that presents rapid eye movements, autonomic activity and muscle atony.¹⁸⁻²⁰

Sleep assessment can be a complex process. There are several instruments that can help in this assessment, such as polysomnography, an instrument considered the gold standard in sleep assessment, which makes an objective assessment, but it is not accessible and expensive; and the sleep questionnaires, which are subjective evaluations of the hospitalized patient's sleep.²⁰⁻²²

NP can also support the evaluation of the quality and quantity of sleep in patients with ACS. Thus, nurses can, through the identification of clinical indicators and contributing factors, define sleep-related ND and propose activities that help promote the quality and quantity of sleep appropriate for these patients.

Given the above, the presence of changes in sleep pattern in patients admitted with ACS and the need to increase the nursing care to sleep in these patients, seeks to validate this ND in this population. Thus, the objective of this study was to perform content analysis of the ND of Disturbed Sleep Pattern (00198) in patients hospitalized with ACS.

METHOD

This was a methodological study of the content analysis type, proposed by the literature as the second stage of the ND validation process. Content analysis is the later stage of the Integrative Review (IR) of the Literature and precedes the clinical validation of the ND; it seeks expert opinions to determine whether the DCs of a given ND represent a specific population.³ It is to be noted that the term "content analysis" was used as this stage is a pre-analysis of an ND since one cannot take into consideration only the opinion of a group of experts to ensure that certain clinical indicators truly represent the content of an ND, requiring its clinical validation.²³

IR is indicated to support the construction of conceptual and operational definitions of DCs of an ND for a specific population.³ Conceptual definitions make reference to the theoretical meaning of DCs, and operational definitions should be able to elucidate how a given concept can be applied, giving practical meaning to conceptual definitions, specifying what procedures should be performed to evaluate such DCs.^{5,24}

This review was performed following recommended criteria and, in addition to helping to determine the conceptual and operational definitions of the Disturbed Sleep Pattern ND (00198),²⁵ also provided support for the introduction of two additional DCs, namely daytime sleepiness and sleep deprivation.

The search for specialists took place through research on curricula of the Lattes Platform - National Council for Scientific and Technological Development (CNPq), using the keywords sleep, nursing, cardiology, nursing diagnoses and nursing classifications; in Graduate Nursing and Health Programs (*stricto-sensu*); by appointment of previously selected nurses (Snowball method); and in visits to units of cardiac hospitalization.

The selection criteria for specialist nurses were adapted from the proposed model.²⁶ Nurses with a score equal to or greater than five were included in the sample. In Chart 1, the selection criteria proposed in this study are detailed.

Chart 1 – Criteria for the selection of specialists. Campinas, SP, Brazil, 2018.

Criteria	Score
Clinical experience of at least four years in cardiology, sleep and/or nursing classifications.	4
Experience of at least one year in clinical teaching of cardiology, sleep and teaching of nursing classifications.	1
Research experience with published articles on nursing classifications in reference journals.	1
Participation of at least two years in a research group in the area of nursing classifications, cardiology or sleep.	1
PhD in Nursing in the area of nursing classifications, cardiology or sleep.	2
Master in Nursing in the area of nursing classifications, cardiology or sleep.	1
Nursing Residency/Specialization in the area of nursing classifications, cardiology or sleep.	1

According to the literature recommendation,²⁶ an extra point should be added for each year of clinical or teaching experience; therefore, nurses who reached up to five points were called *Juniors*; those who hit six to 20 points *Masters* and those who scored over 20 were called *Seniors*.²⁶

The sample size followed the statistical calculation proposed by the literature,⁴ which determines a sample of 49 experts with a 95% confidence level, an expert agreement level of 85% and a 10% sampling error.

Data was collected from April to November 2017. The specialist nurses were invited to participate in the study via e-mail by the lead researcher. In the same vein, the Free and Informed Consent Form (FICF) was sent and the sample characterization and data collection instruments that were built on *Google Forms*.

These instruments were previously reviewed and analyzed by three judges, nurses and non-experts, who analyzed the instrument for clarity, comprehensiveness and relevance.

In the FICF there was information about the research and the ethical aspects. The data collection instrument, which was divided into two parts, included the characterization of the sample, such as sociodemographic data and professional experience; and the content analysis, which provided guidelines for its completion, a description of the Disturbed Sleep Pattern ND (00198) and the eight DCs with their conceptual and operational definitions, scoring space for each DC and suggestions.

The experts evaluated each DC for the following items: relationship with the referred population, its relevance, clarity and accuracy. Relevance is related to the item's ability to be consistent for inpatients with ACS; clarity, the ability of the item to be intelligible, with succinct sentences and simplified and unambiguous expressions, and should present a single idea; and precision, to the ability of the item to be present continuously, accurately indicating its presence in the referred population.²⁷

Each item on each DC had a Likert scale, with scores from 1 to 5, which were later dichotomized. Thus 1, 2 and 3 denoted inadequate DCs (1 None: population-related/relevant/clear/accurate; 2 Little: population-related/relevant/clear/accurate; 3 Somehow: population-related/relevant/clear/accurate/

need). On the other hand, 4 and 5 denoted the appropriate DCs (4 Very: population-related/relevant/clear/accurate; 5 Extremely: population-related/relevant/clear/accurate).

Data analysis was performed using descriptive statistics to characterize the sample through frequencies, position measurements (mean, median, minimum and maximum) and dispersion (standard deviation - SD), using the program *Statistical Package for Social Sciences*® 20.0. The *Statistical Analysis Software*® Version 9.4 was used to perform the binomial, chi-square and Fisher's exact tests. The first one was applied in order to verify if, proportionally, the agreement among the experts was not different from 85%. The others, to make associations between the items evaluated in the content analysis and the variables time of professional formation, time of professional practice and scoring of specialists. A significance level of 5% was considered.

It is noteworthy that the hypotheses formulated for this study were the following: null hypothesis (the proportion of experts who rated the indicator as appropriate is not different from 85%) and alternative hypothesis (the proportion of experts who rated the indicator as appropriate is different from 85%)

The experts participated after reading and accepting the FICF.

RESULTS

The sample consisted of 54 specialists with a mean age of 37/39 years old, standard deviation (SD) of 9.73, with a minimum age of 25.00, a maximum of 70.00 years old and a median of 35.00 years old; their time of training was 14/19 years (SD 9.36), minimum of 4.16 and maximum of 44.41 years; their mean professional experience time was 12/15 years (SD 7.77), minimum of 3.08 and maximum of 35.00 years. Although the minimum experience time does not seem to meet the established criteria, the only specialist who had 3.08 years of experience was included because she added her period of residence in the area at that time. The score of the evaluated criteria presented a mean of 16.11 points (SD 10.71), ranging from 5.00 to 55.00 points and with a median of 13.50. The other characteristics of the sample were presented in Table 1.

Table 1 – Characterization of the sample of specialists. Campinas, SP, Brazil, 2018. (n=54)

	n	%
Gender		
Female	43	79.63
Male	11	20.37
Education		
Doctor's degree	16	29.63
Master's degree	07	12.96
Specialization	20	37.04
Residence	02	03.70
Graduation	09	16.67
Score		
5 points	8	14.81
6 to 20 points	32	59.26
> 20 points	14	25.93
Clinical experience*		
Nursing diagnosis	50	92.59
Cardiology, sleep and/or classifications	53	98.14

Table 1 – Cont.

	n	%
Minimum teaching experience of one year		
Yes	41	75.93
No	13	24.07
Article publication		
Yes	22	40.74
No	32	59.26
Participation in study groups		
Yes	31	57.41
No	23	42.59

*The specialist could tick more than one option.

It is noteworthy that 55.6% (n=30) of the sample had some specialization; 37.04% (n=20), a master's degree; 29.63% (n=16), a doctorate; and 24.07% (n=13), were interns in one of the study areas.

Regarding the origin of the specialists, they came from nine different Brazilian states: Rio Grande do Sul; Minas Gerais; Rio de Janeiro; Santa Catarina; Paraná; Paraíba; Pernambuco; Mato Grosso do Sul and São Paulo, the latter being where most participants came from (64.81%).

As for the DCs, those that obtained a statistical agreement equal to 85%, i.e., a p-value greater than 0.05, were validated once the null hypothesis was accepted. Table 2 presents the results of the content analysis of the said ND.

Table 2 – Statistical analysis of the content analysis of the Disturbed Sleep Pattern Nursing Diagnosis, according to the opinion of specialists. Campinas, SP, Brazil, 2018. (n=54)

Defining Characteristics	Concordance %	p-value*
Dissatisfaction with sleep	89.25	0.3818
Feeling unrested	89.04	0.4057
Sleep deprivation	88.18	0.5128
Alteration in sleep pattern	87.45	0.6141
Unintentional awakening	84.57	0.9295
Difficulty initiating sleep	83.54	0.7638
Daytime sleepiness	81.27	0.4427
Difficulty in daily functioning	75.31	0.0461

*p-value obtained by means of the Binomial test.

Table 3 indicates the statistically significant associations found in this study. The variables time of training, length of work and final score of nurses were associated with the items in relation to population, clarity, relevance and precision of the conceptual and operational definitions of the DCs of the ND. In this analysis, it was sought to verify possible influences of the variables described, with the judgment of the DCs by the specialists, mainly because they are subjective DCs.

Table 3 – Significant associations between the evaluated items and the characteristics of the specialists. Campinas, SP, Brazil, 2018. (n=54)

Defining Characteristics	Time of training [§]	Active time in the profession [§]	Final score [§]
1. Alteration in sleep pattern - CD [†] Clarity	0.0354		
2. Difficulty initiating sleep - OD [†] Clarity	0.0336		
3. Daytime sleepiness - REP [‡] Clarity	0.0330		
4. Difficulty initiating sleep - OD [†] Clarity		0.0263	
5. Difficulty initiating sleep - OD [†] Clarity			0.0231
6. Difficulty initiating sleep - REP [‡] Relevance			0.0143
7. Difficulty initiating sleep - CD [†] Relevance			0.0196
8. Difficulty initiating sleep - OD [†] Relevance			0.0193
9. Difficulty initiating sleep - CD [†] Accuracy			0.0245

* CD: Conceptual Definition; † OD: Operational Definition; ‡ REP: Relationship of Evidence with Population; §p-value obtained by Fisher's exact test.

There was a statistically significant association between items 1, 2 and 3, described in the table, at the time of training. Item 1 was judged as appropriate by specialists with 10 to 19 years of training and items 2 and 3 by specialists with less than 10 years and with 10 to 19 years of training.

Item 4, from Table 3, had a significant association in relation to the working time, and 19 specialists with less than 10 years of experience judged this item appropriate, as well as 20 specialists with a working time between 10 and 19 years, and 2 specialists with more than 20 years of experience also did so.

The other items described in Table 3 (5,6,7, 8 and 9) were significantly associated with the experts' score, being judged as appropriate by the "*Master*" specialists.

DISCUSSION

Defining nurses as specialists is one of the difficulties encountered in the ND validation process, since there is no consensus in the literature regarding the selection criteria. However, it is believed that there should be a balance between academic background and clinical experience, as nurses will be considered as specialists in their field, the greater their titles and experiences in research and practice.²⁸

Given the above, finding nurses who met the proposed criteria and who responded to the assessment was a difficulty found in this study, corroborating the literature²⁹ which points out that, when conducting ND validation studies in Brazil, reaching the appropriate number of specialists is an obstacle. However, this research was successful at the expense of increasing the data collection time initially proposed in three months.

The mean age of the sample was in the phase called "Professional Maturity", i.e., individuals with full development of cognitive skills and qualification. This is usually the moment when the practitioner reaches fullness in his or her cognitive skills and abilities.³⁰

Most were female, agreeing with the sociodemographic profile of nursing in Brazil, which showed that approximately 85% of the workers in this area are in this classification and, although there has been growth in the training of male nurses, the class is still predominantly female.³⁰ However, there is no evidence in the literature that this condition may influence the inference of content analysis.

Regarding the professional training of specialists, the results partially differ from the study conducted to analyze the general aspects of the sociodemographic profile of 330 thousand nurses in the

country, whose results showed that the majority (72.8%) of the professionals had some specialization, followed by master's degree (14.5%), residency (8.1%) and doctorate (4.7%).³¹

Most experts were classified as *Masters*, considered in this study those with a score of 6 to 20 points, that is, very experienced specialists and at the peak of their professional career, regarding clinical and/or academic practice. These more experienced specialists are able to achieve high levels of performance and expertise, develop attention span and focus on details, characteristics and important information, while ignoring unimportant information, the more experience they acquire the more selective they become.³²

The *Junior Specialists*, considered in this study with a score of five, were the minority. These, in turn, as likely novice specialists tend to have slower responses to information absorption, since diagnostic thinking is still limited. The "*Seniors*" with scores above 20, however, have the highest degree of expertise; but, as they become more experienced, they tend to become more confident and may fail to listen and stick to relevant details, thus finding that experts are liable to errors and omissions of important information.³²

Thus, it is understood that most of the nurse specialists participating in the study were at the height of the perception of details, their performance and expertise, and full cognitive abilities to perform content analysis.

Although most of the specialists did not submit published articles on nursing classifications, they participated in research groups allocated within the CNPq's Research Directories. The valorization of the scientific production for the development of evidence-based practice, increasing the visibility, recognition and consolidation of nursing as a science, end-activities of the research and studies group, will leave the nurse-member with strategies to qualify the profession, since participates in a process of in-depth reflection on nursing praxis, with regard to scientific research.³³

The scientific research activities and the production of new sectorized knowledge developed in the groups bring together researchers and nurses, considered experts in the field of knowledge and lead them to the theoretical and practical deepening of nursing.³⁴

Regarding the results of the content analysis, the values of the statistical tests greater than 0.05 did not reject the null hypothesis and ensured that the proportion of experts who considered the indicator adequate was not different from 85%.

Thus, seven of the eight DCs, including two additional ones, of the Disturbed Sleep Pattern ND (000198) were considered valid for patients hospitalized with ACS in the content analysis stage, corroborating the hypothesis that this ND is actually present in this population.⁹⁻¹¹

In a study that aimed to describe the quality of sleep and identify associated factors in patients hospitalized for AMI, it was found that, although most patients had decreased efficiency and duration of sleep, most patients reported good sleep when questioned directly, even when scores obtained in a sleep assessment instrument pointed to the presence of poor sleep quality. That situation verified that the patient himself could devalue his sleep quality³⁵ and be satisfied with his night's sleep, even with indicators that would qualify for a bad night's sleep.

Another study, which aimed to identify the NDs in individuals in the preoperative period of cardiac surgery, found that 52.9% of the patients had sleep pattern disorders and the most prevalent DC in these patients was dissatisfaction with sleep.³⁶

"Dissatisfaction with sleep" is a DC that seeks, through the patient's verbal report, to highlight the lack of satisfaction with sleep and can be related to other DCs, such as "Feeling unrested", which can be identified by verbal report of the patient feeling tired when waking up or during the day. Many patients find sleep inadequate, that is, unsatisfactory when, minimally, their behavioral functioning is not maintained,¹⁹ an impairment caused by tiredness, for example.

Another DC that was later inserted from IR and validated in the present study was “Sleep deprivation”. The literature³⁷ points out that this is a clinical indicator present in critically ill and hospitalized patients, such as those with ACS. It relates to the patient’s verbal complaint of being sleepless for some time, that is, insufficient sleep, and it is known that abstinence and poor sleep continuity can cause physiological changes and deleterious consequences to patients with ACS,^{13–17,38} leading to worsening of the clinical picture.

A longitudinal study that aimed to evaluate the sleep of patients after ACS, outside the hospitalization setting, showed that patients had, in the acute phase after ACS, decreased total sleep time, in addition to decreased efficiency, NREM sleep and REM sleep, that is, in their quality and quantity of sleep. It was observed that the quality and quantity of sleep may reflect, in the short and long term, on the patients’ quality of life.⁹

Still referring to the quality and quantity of sleep, the “Alteration in sleep pattern” DC refers to patients’ verbal reports of qualitative and quantitative sleep changes. In the literature, some research studies^{9,39–40} corroborate the opinion of the specialists, who judged this DC present in the patients in question.

One study suggested that patients with ACS may have less than seven hours of sleep, i.e., short sleep duration, and correlate it with a high risk (>50%) of recurrent ACS or death one year after the primary ACS.³⁹

Another study that aimed to analyze the relationship between clinical outcome worsening and risk of obstructive sleep apnea syndrome, sleep quality and daytime sleepiness in infarcted patients admitted to cardiac units, observed that 71.7% had poor sleep quality, and this was the only independent variable associated with the patient’s clinical outcomes, i.e., the worse the sleep quality of these individuals, the higher the chances of worsening the clinical outcomes during hospitalization.⁴⁰

It is common during hospitalization for individuals to have “Unintentional awakening”. This DC is related to the report, by patients with ACS, of the occurrence of awakenings during sleep. This could be evidenced by a study that sought, among its objectives, to describe the quality of sleep in patients hospitalized with AMI, and which emphasized that sleep fragmentation, i.e., awakening at night or in the morning, is present in almost half of the study sample of patients, which also interfered with their sleep quality.³⁵

The factors that contributed to poor sleep quality, according to a study that evaluated the sleep of patients with ACS admitted to Coronary Care Units were, during the night, light and concern about the disease and, during the daytime, the team talk.⁴¹

There are still interpersonal (lack of self-control and inability to play a role in the family), physiological (pain) and psychological (fear of death) factors;^{42–44} these, added to the experience of hospitalization, may lead to the appearance of signs and symptoms related to poor quality and quantity of sleep and, thus, the presence of Disturbed Sleep Pattern ND (00198) in this population.

The “Difficulty initiating sleep” DC was also validated for patients admitted with ACS. A study that sought to acknowledge sleep-related complaints of hospitalized patients and suggest actions to improve the sleep of these patients found that they took 47 minutes to initiate sleep, considered a long time. Another clinical indicator presented in this study was “Daytime sleepiness” and naps.⁴⁵

“Daytime sleepiness” was another DC inserted after IR, and validated by the specialists. Supporting this finding, a study that aimed to characterize daytime sleepiness in AMI patients and to associate the sociodemographic and clinical characteristics found that 29.2% of a total of 113 patients had excessive daytime sleepiness.⁴⁶

In this research, the content analysis of the RFs of the NANDA-I classification was not proposed, but the possible intervening sleep factors found in the studies^{36,42–45} partially corroborate the RFs described in NANDA-I.

It is also observed that the “Alteration in sleep pattern” DC is extremely related to the others, since it will be present when patients report the presence of quantitative and qualitative sleep changes. Such changes may be due to unsatisfactory sleep, tiredness, sleep deprivation and awakenings due to related factors. Another observation is that the title of the “Disturbed Sleep Pattern” (00198) is similar to this DC, as the definition of the diagnosis involves elements contained in the validated definition of this DC by this study, which refers to the fact that it can be the most accurate DC for this ND.

Also in relation to the title, it is suggested that the internal factors be included as factors resulting from the poor quality and quantity of sleep, since it was evidenced that, besides the external factors, these factors contribute to the alteration of the sleep pattern. Thus, the “time-limited interruptions of sleep amount and quality due to external and internal factors” definition is proposed.

Such a change could also contribute to the introduction of RFs that identify the disease itself, pain and nausea as contributing factors to the poor quality and quantity of sleep of the study patients since, although the analysis of the RFs did not fall within the scope of this study, they were evidenced in the first stage of IR.

The significant associations obtained express that the higher the time of training, professional performance and final score related to the selection criteria, the better the judgment of the specialists regarding the DC. Thus, the length of clinical practice significantly interferes with nurses’ accurate decision-making, as found in this study, since it was shown that the items evaluated - relationship with population, relevance, clarity and precision - expressed the majority of the DCs, if evaluated separately.

It was evidenced that the most accurate judgment was the items of the Difficulty initiating sleep DC. It is noteworthy that the relationship with the population, conceptual and operational definition, with regard to relevance, clarity and precision established significant statistical association with the score, an element considered for the stratification of specialists.

Although the specialists’ score classification was obeyed, only two with clinical experience and none with teaching experience on sleep participated in the study, which may have influenced the result, since the clinical and teaching experiences were focused on the themes of ND and Cardiology.

Some NDs, such as those related to sleep, are subjective and involve areas of study still incipient in nursing, which may justify the reduced number of nurses with this theme. Although this fact can be pointed as a limiting factor, it did not make the study unfeasible, since strict criteria for selection of specialists were followed.

CONCLUSION

The DCs of the Disturbed Sleep Pattern ND (00198) validated were the following: Dissatisfaction with sleep, Feeling unrested, Alteration in sleep pattern, Unintentional awakening, and Difficulty initiating sleep; and the additional ones, supported by the literature, were Sleep deprivation and Daytime sleepiness. The results verified the interrelationship of the DCs of the referred ND and the suggestion to insert the additional DCs presented in this study.

This study sought to contribute to the refinement of the ND in question, and to improve the quality of care of patients hospitalized with ACS with regard to changes in sleep pattern, reducing the complications resulting from these disorders and giving visibility to this subject, which is really neglected by the health team. It will also stimulate the continuous search for valorization of the use of NP in clinical practice and in the provision of care to the individual, as well as subsidize the next stage of the validation process of the Disturbed Sleep Pattern ND (00198), the clinical validation.

REFERENCES

1. Conselho Federal de Enfermagem. Resolução Cofen-358/2009: dispõe sobre a Sistematização da Assistência de Enfermagem e a Implementação do Processo de Enfermagem em ambientes, públicos ou privados, em que ocorre o cuidado do profissional de Enfermagem, e dá outras providências. Brasília, 15 de outubro de 2009. [cited 2018 Mar 18]. Available from: http://www.cofen.gov.br/resoluo-cofen-3582009_4384.html
2. Herdman TH, Kamitsuru S, editors. *NANDA International nursing diagnoses: definitions and classification, 2018–2021*. Oxford(UK): Wiley-Blackwell; 2017.
3. Lopes MVO, Silva VM, Araujo TL. Métodos de pesquisa para validação clínica de conceitos diagnósticos. In: Herdman TH, Carvalho EC. *PRONANDA: programa de atualização em diagnósticos de enfermagem*. Porto Alegre, RS(BR): Artmed/Panamericana; 2013.
4. Lopes MVO, Silva VM, Araujo TL. Methods for Establishing the Accuracy of Clinical Indicators in Predicting Nursing Diagnoses. *Int J Nurs Knowl*. [Internet]. 2012 [cited 2018 Mar 18];23(3):134-9. Available from: <https://dx.doi.org/10.1111/j.2047-3095.2012.01213.x>
5. Avena MJ, Pedreira MLG, Gutiérrez MGR. Conceptual validation of the defining characteristics of respiratory nursing diagnoses in neonates. *Acta Paul. Enferm* [Internet]. 2014 [cited 2018 May 20]; 27(1):76-85. Available from: <https://dx.doi.org/10.1590/1982-0194201400015>
6. Moreira RP, Guedes NG, Lopes MVO, Cavalcante TF, Araújo TL. Nursing diagnosis of sedentary lifestyle: expert validation. *Texto Contexto Enferm* [Internet]. 2014 [cited 2018 Mar 18];23(3):547-54. Available from: <http://dx.doi.org/10.1590/0104-07072014000590013>
7. Herdman TH, Kamitsuru S, editors. *NANDA International nursing diagnoses: definitions and classification, 2015–2017*. Oxford (UK): Wiley-Blackwell; 2014. p. 202.
8. Yilmaz S, Aksoy E, Dogan T, Diken AI, Yalcinkaya A, Ozsen K. Angina severity predicts worse sleep quality after coronary artery by-pass grafting. *Perfusion*. [Internet]. 2016 [cited 2019 Apr 05];31(6):471-6. Available from: <https://dx.doi.org/10.1177/0267659115627690>
9. Schiza SE, Simantirakis E, Bouloukaki I, Mermigkis C, Arfanakis D, Chrysostomakis S, et al. Sleep patterns in patients with acute coronary syndromes. *Sleep Medicine*. [Internet]. 2010 [cited 2018 Mar 18];11(2):149-53. Available from: <https://dx.doi.org/10.1016/j.sleep.2009.07.016>
10. Ribeiro CP, Silveira CO, Benetti ERR, Gomes JS, Stumm EMF. Nursing diagnoses for patients in the postoperative period of cardiac surgery. *Rev Rene*. [Internet]. 2015 [cited 2019 Apr 05]; 16(2):159-67. Available from: <https://www.redalyc.org/html/3240/324038465004/>
11. Martins DL, Garcia TR. Nursing diagnosis of patients with myocardial infarction, according to the conceptual model of Florence Nightingale. *Braz J Nurs (Online)*. [Internet]. 2004 [cited 2018 Mar 18];3(2):49-57. Available from: http://www.objnursing.uff.br/index.php/nursing/article/view/4932/html_786
12. Issa AC, Oliveira GMM, Abreu LM, Rocha RM, Esporcatte R. *MAC: Manual de Atualização e Conduta. Síndrome Coronariana Aguda (SCA)*. São Paulo, SP(BR): PlanMark; 2015. Available from <https://socerj.org.br/wp-content/uploads/2015/11/manual-de-conduta.pdf>
13. Sun W, Huang Y, Wang Z, Yu Y, Lau A, Ali G, et al. Sleep duration associated with body mass index among Chinese adults. *Sleep Medicine*. [Internet]. 2015 [cited 2018 Mar 18];16:612-6. Available from: <https://dx.doi.org/10.1016/j.sleep.2014.12.011>
14. Shan Z, Ma H, Xie M, Yan P, Guo Y, Bao W, et al. Sleep duration and risk of type 2 diabetes: a meta-analysis of prospective studies. *Diabetes Care*. [Internet]. 2015 [cited 2018 Mar 18]; 38:529-37. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/25715415>

15. Xie D, Li W, Wang Y, Gu H, Teo K, Liu L, et al. Sleep duration, snoring habits and risk of acute myocardial infarction in China population: results of the INTERHEART study. *BMC Public Health*. [Internet]. 2014 [cited 2018 Mar 18];14:531. Available from: <https://dx.doi.org/10.1186/1471-2458-14-531>
16. Ge B, Guo X. Short and long sleep durations are both associated with increased risk of stroke: a meta-analysis of observational studies. *Int. J. Stroke*. [Internet]. 2015 [cited 2018 Mar 18];10:177-84. Available from: <https://dx.doi.org/10.1111/ijss.12398>
17. Parthasarathy S, Vasquez MM, Halonen M, Bootzin R, Quan SF, Martinez FD, et al. Persistent insomnia is associated with mortality risk. *Am J Med*. [Internet]. 2015 [cited 2019 Apr 05];128(3):268-75. Available from: <https://dx.doi.org/10.1016/j.amjmed.2014.10.015>
18. Carskadon MA, Dement WC. Normal Human Sleep: An Overview. In: Kryger MH, Roth T, Dement WC, editors. *Principles and Practice of Sleep Medicine*. 5th ed. Philadelphia (US): Elsevier Saunders; 2011. p. 16- 26.
19. Luyster FS, Strollo PJ, Zee PC, Walsh JK. Sleep: A Health Imperative. *Sleep*. [Internet]. 2012 [cited 2018 May 20];35(6):727-34. Available from: <https://dx.doi.org/10.5665/sleep.1846>
20. Buysse DJ. Sleep health: can we define it? Does it matter? *Sleep*. [Internet]. 2014 [cited 2018 May 20];37(1):9-17. Available from: <https://dx.doi.org/10.5665/sleep.3298>
21. Ibáñez V, Silva J, Cauli O. A survey on sleep assessment methods. *Peer J*. [Internet]. 2018 [cited 2018 June 25];6:e4849. Available from: <https://peerj.com/articles/4849/>
22. Hoey LM, Fulbrook P, Douglas JA. Sleep assessment of hospitalised patients: a literature review. *Int. J Nurs Stud* [Internet]. 2014 [cited 2018 May 20];51(9):1281-8. Available from: <http://dx.doi.org/10.1016/j.ijnurstu.2014.02.001>
23. Lopes MVO, Silva VM, Araujo TL. Validation of nursing diagnosis: challenges and alternatives. *Rev Bras Enferm* [Internet]. 2013 [cited 2018 June 15];66(5):649-55. Available from: <https://dx.doi.org/10.1590/S0034-71672013000500002>
24. Soares CB, Hoga LAK, Peduzzi M, Sangaleti C, Yonekura T, Silva DRAD. Integrative Review: concepts and methods used in nursing. *Rev Esc Enferm USP* [Internet]. 2014 [cited 2018 May 20];48(2):335-45. Available from: <https://dx.doi.org/10.1590/S0080-6234201400002000020>
25. Manzoli JPB, Correia MDL, Duran ECM. Conceptual and operational definitions of the defining characteristics of the nursing diagnosis Disturbed Sleep Pattern. *Rev Latino-Am Enfermagem* [Internet]. 2018 [cited 2019 Apr 05]; 26:e3105. Available from: <http://dx.doi.org/10.1590/1518-8345.2582.3105>
26. Guimarães HCQCP, Pena SB, Lopes JL, Lopes CT, Barros ALBL. Experts for validation studies in nursing: new proposal and selection criteria. *Int J Nurs Knowl* [Internet]. 2016 [cited 2018 Jan 05];27(3):130-5. Available from: <https://dx.doi.org/10.1111/2047-3095.12089>
27. Pasquali L, organizador. *Instrumentos psicológicos: manual prático de elaboração*. Brasília, DF(BR): LabPAM/IBAPP; 1999.
28. Galdeano LE, Rossi LA. Validação de conteúdo diagnóstico: critérios para seleção de expertos. *Ciênc. Cuid. Saúde*. [Internet] 2006 [cited 2018 May 20];5(1):60-66. Available from: <https://dx.doi.org/10.4025/ciencucuidsaude.v5i1.5112>
29. Chaves ECL, Carvalho EC, Rossi LA. Validation of nursing diagnoses: validated types, patterns and components validated. *Rev. Eletr Enferm* [Internet]. 2008 [cited 2018 May 20];10(2):513-520. Available from: <https://dx.doi.org/10.5216/ree.v10i2.8063>

30. Machado HM, Aguiar Filho W, Lacerda WF, Oliveira E, Lemos W, Wermelinger M. Características gerais da enfermagem: o perfil sócio demográfico. *Enferm Foco*. [Internet]. 2016 [cited 2018 May 20];7(1-4):11-7. Available from: <https://dx.doi.org/10.21675/2357-707X.2016.v7.nesp.686>
31. Frota MA, Rolim KMC. Aspectos gerais da formação da enfermagem: o perfil da formação dos enfermeiros, técnicos e auxiliares – debatedor 1. *Enferm Foco* [Internet]. 2016 [cited 2018 May 20];7(Spe):15-34. Available from: <https://dx.doi.org/10.21675/2357-707X.2016.v7.nESP.688>
32. Dror IE. The ambition to be scientific: human expert performance and objectivity. *Sci Justice*. [Internet]. 2013 [cited 2018 May 24];53(1):81-2. Available from: <https://dx.doi.org/10.1016/j.scijus.2013.03.002>
33. Erdmann AL, Peiter CC, Lanzoni GMM. Brazilian research groups in nursing: comparison of 2006 and 2016 profiles. *Rev. Gaúcha Enferm*. [Internet]. 2017 [cited 2018 May 24];38(2):e69. Available from: <https://dx.doi.org/10.1590/19831447.2017.02.69051>
34. Erdmann AL, Santos JLG, Klock P, Soder RM, Dal Sasso GTM, Erdmann RH. Policies, Management and Innovation Research Groups for Nursing Excellence. *Aquichan*. [Internet]. 2013 [cited 2018 Mar 4];13(1):92-103. Available from: http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S1657-59972013000100009&lng=e&tlng=.
35. Andrechuk CRS, Ceolim MF. Sleep quality in patients with acute myocardial infarction. *Texto Contexto Enferm*. [Internet]. 2015 [cited 2018 May 24];24(4):1104-11. Available from: <https://dx.doi.org/10.1590/0104-0707201500002970014>
36. Galdeano LE, Rossi LA, Pezzuto TM. Nursing diagnosis of patients in the preoperative period of cardiac surgery. *Rev Esc Enferm USP*. [Internet]. 2004 [cited 2018 May 24];38(3):307-16. Available from: <https://dx.doi.org/10.1590/S0080-62342004000300009>
37. Huang HW, Zheng BL, Jiang L, Lin ZT, Zhang GB, Shen L, et al. Effect of oral melatonin and wearing earplugs and eye masks on nocturnal sleep in healthy subjects in a simulated intensive care unit environment: which might be a more promising strategy for ICU sleep deprivation? *Crit Care*. [Internet]. 2015 [cited 2019 Apr 05];19(1):124. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4365553/>
38. Tobaldini E, Costantino G, Solbiati M, Cogliati C, Kara T, Nobili L, et al. Sleep, sleep deprivation, autonomic nervous system and cardiovascular diseases. *Neurosci Biobehav Rev*. [Internet]. 2017 [cited 2018 May 24];74:321-329. Available from: <https://dx.doi.org/10.1016/j.neubiorev.2016.07.004>
39. Alcántara C, Peacock J, Davidson KW, Hiti D, Edmondson D. The association of short sleep after acute coronary syndrome with recurrent cardiac events and mortality. *Int J Cardiol*. [Internet]. 2014 [cited 2018 May 24];171(2):11-12. Available from: <https://dx.doi.org/10.1016/j.ijcard.2013.11.135>
40. Andrechuk CRS, Ceolim MF. Sleep quality and adverse outcomes for patients with acute myocardial infarction. *J. Clin Nurs*. [Internet]. 2015 [cited 2018 June 2];25:223-230. Available from: <https://dx.doi.org/10.1111/jocn.13051>
41. Storti LJ, Servantes DM, Borges M, Bittencourt L, Maroja FU, Poyares D. Validation of a novel sleep-quality questionnaire to assess sleep in the coronary care unit: a polysomnography study. *Sleep Medicine*. [Internet]. 2015 [cited 2018 June 5];16:971-5. Available from: <https://dx.doi.org/10.1016/j.sleep.2015.03.014>
42. Membrive AS, Souza e Souza LP, Donoso MTV, Silqueira SMF, Corrêa AR, Matos SS. Characterization of stressors involved in hospitalization of patients in coronary unit. *Rev Baiana Enferm*. [Internet]. 2017 [cited 2018 June 05];31(1):e16552. Available from: <http://dx.doi.org/10.18471/rbe.v31i1.16552>

43. Magalhães FMNM, Jesus SA, Gois CFL, LLapa- Rodríguez EO, Santos V, Marques DR, et al. Evaluation of stressors to the patient in a cardiology intensive care unit. *Enferm Foco*. [Internet]. 2014 [cited 2018 June 05];5(1-2):8-12. Available from: <http://revista.cofen.gov.br/index.php/enfermagem/article/view/596/266>
44. Dias DS, Resende MV, Diniz GCLM. Patient stress in intensive care: comparison between a coronary care unit and a general postoperative unit. *Rev Bras Ter Intensiva*. 2015 [cited 2018 June 10];27(1):18-25. Available from: <http://www.scielo.br/pdf/rbti/v27n1/0103-507X-rbti-27-01-0018.pdf>
45. Silva LEL, Oliveira MLC, Inaba WK. Factors interfering in sleep quality of hospitalized patients. *Rev Eletr Enf* [Internet]. 2011 [cited 2018 June 15];13(3):521-8. Available from: <https://www.researchgate.net/publication/317455263>
46. Andrechuk CRS, Ceolim MF. Excessive daytime sleepiness in patients with acute myocardial infarction. *Acta Paul Enferm*. [Internet]. 2015 [cited 2018 June 15];28(3):230-6. Available from: <https://dx.doi.org/10.1590/1982-0194201500039>

NOTES

ORIGIN OF THE ARTICLE

Article extracted from the dissertation - Diagnostic Accuracy of disturbed sleep pattern in patients with acute coronary syndrome, presented to the *Programa de Pós-Graduação da Faculdade de Enfermagem da Universidade Estadual de Campinas*, in 2018.

CONTRIBUTION OF AUTHORITY

Study desing: Manzoli JPB, Duran ECM.

Data collect: Manzoli JPB, Montanari FL, Carvalho LAC, Ferreira RC, Ribeiro E, Duran ECM.

Data analysis and interpretation: Manzoli JPB, Montanari FL, Carvalho LAC, Ferreira RC, Ribeiro E, Duran ECM.

Discussion of the results: Manzoli JPB, Montanari FL, Carvalho LAC, Ferreira RC, Ribeiro E, Duran ECM.

Writing and/or critical review of content: Manzoli JPB, Montanari FL, Carvalho LAC, Ferreira RC, Ribeiro E, Duran ECM.

Review and final approval of the final version: Manzoli JPB, Montanari FL, Carvalho LAC, Ferreira RC, Ribeiro E, Duran ECM.

APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research with Human Beihgs of the *Universidade Estadual de Campinas*, under opinion number 2,220,033, Certificate of Presentation for Ethical Appreciation 61923216.2.0000.5404.

CONFLICT OF INTERESTS

There is no conflict of interest.

HISTORICAL

Received: September 17, 2018.

Approved: June 10, 2019.

CORRESPONDING AUTHOR

Juliana Prado Biani Manzoli

julianapbiani@gmail.com