



# Journal of Nursing

Revista de Enfermagem

UFPE On Line

ISSN: 1981-8963

## ORIGINAL ARTICLE

### NURSING DIAGNOSIS IDENTIFIED IN THE INDIVIDUAL WITH SPINAL CORD INJURY

#### DIAGNÓSTICOS DE ENFERMAGEM IDENTIFICADOS NO SUJEITO COM LESÃO MEDULAR DIAGNÓSTICOS DE ENFERMERÍA IDENTIFICADOS EN EL INDIVIDUO CON LESIÓN MEDULAR

Adriana Santana Vasconcelos<sup>1</sup>, Inacia Sátiro Xavier de França<sup>2</sup>, Francisco Stélio de Sousa<sup>3</sup>, Marta Miriam Lopes Costa<sup>4</sup>

#### ABSTRACT

**Objective:** to identify nursing diagnoses according to the taxonomy of North American Nursing Diagnosis Association International (NANDA-I) present in subjects with spinal cord injuries, correlating them with the universal requirements. **Method:** a descriptive study, exploratory case study with a qualitative approach. The convenience sample was composed of five subjects with spinal cord injury. Data were collected with the history of nursing. The analysis of the data backed up on the Theory of Self-care and nursing diagnoses from NANDA-I. The study was approved by the Ethics Committee in Research CAAE 0068.0.133.000-11. **Results:** we identified nine diagnoses, 12 and 29 defining characteristics related factors/risk. **Conclusion:** it was found that the spinal cord injury caused considerable change in the organic functioning and development of the subject, and require reorganization of the health system to ensure the Principle of Completeness of health care. **Descriptors:** Nursing; Nursing Diagnosis; Health Promotion; Spinal Cord Injuries.

#### RESUMO

**Objetivo:** identificar os diagnósticos de enfermagem, de acordo com a taxonomia North American Nursing Diagnosis Association International (NANDA-I), presentes nos sujeitos com lesões da medula espinal, correlacionando-os com os requisitos universais. **Método:** estudo descritivo, exploratório do tipo estudo de caso, com abordagem qualitativa. A amostra por conveniência foi constituída por cinco sujeitos com lesão da medula espinal. Coletaram-se dados com o histórico de enfermagem. A análise dos dados respaldou-se na Teoria do Autocuidado e diagnósticos de enfermagem da NANDA-I. O estudo foi aprovado no Comitê de Ética em Pesquisa, sob CAAE 0068.0.133.000-11. **Resultados:** identificaram-se nove diagnósticos, 12 características definidoras e 29 fatores relacionados/de risco. **Conclusão:** verificou-se que a lesão da medula espinal ocasionou considerável alteração no funcionamento orgânico e desenvolvimento dos sujeitos, além de exigir reorganização do sistema de saúde para garantir o Princípio de Integralidade da assistência em saúde. **Descritores:** Enfermagem; Diagnóstico de Enfermagem; Promoção da Saúde; Traumatismos da Medula Espinal.

#### RESUMEN

**Objetivo:** identificar los diagnósticos de enfermería según la taxonomía de la North American Nursing Diagnosis Association Internacional (NANDA-I) presente en los pacientes con lesiones de la médula espinal, su correlación con los requisitos universales. **Método:** estudio exploratorio descriptivo, tipo estudio de caso con enfoque cualitativo. La muestra de conveniencia estuvo integrado por cinco sujetos con lesión de la médula espinal. Los datos fueron recolectados con la historia de la enfermería. El análisis de los datos de copia de seguridad en la Teoría de la Auto-cuidado y diagnósticos de enfermería de la NANDA-I. El estudio fue aprobado por el Comité de Ética en Investigación, CAAE 0068.0.133.000-11. **Resultados:** se identificaron nueve diagnósticos, 12 y 29 se definen las características/factores de riesgo relacionados. **Conclusión:** se encontró que la lesión de la médula espinal causada considerable cambio en el funcionamiento orgánico y el desarrollo de la asignatura, y requieren de una reorganización del sistema de salud para garantizar el Principio de Integridad de los servicios de salud. **Descriptores:** Enfermería; Diagnóstico De Enfermería; Promoción de la Salud; Lesiones de la Médula Espinal.

<sup>1</sup>Nurse, Nursing at the Federal University of Campina Grande/UFCG. Campina Grande (PB), Brazil. E-mail: [enfadrianasv@gmail.com](mailto:enfadrianasv@gmail.com);

<sup>2</sup>Nurse, Professor Graduate/Post Graduate in Nursing/PPGENF, State University of Paraíba/UEPB. Campina Grande (PB), Brazil. E-mail: [inacia.satiro@gmail.com.br](mailto:inacia.satiro@gmail.com.br); <sup>3</sup>Nurse, Professor Graduate/Post Graduate in Nursing / PPGENF, State University of Paraíba/UEPB. Campina Grande (PB), Brazil. E-mail: [stelio\\_uepb@yahoo.com.br](mailto:stelio_uepb@yahoo.com.br); <sup>4</sup>Nurse, Professor Graduate/Post Graduate in Nursing/PPGENF, Federal University of Paraíba/UFPB. João Pessoa (PB), Brazil. E-mail: [marthamyriam@hotmail.com](mailto:marthamyriam@hotmail.com)

## INTRODUCTION

The spinal cord injuries - henceforth LME - are neurological damage that can cause motor and sensory disabilities with limited capacity for self-care and in family interventions.<sup>1</sup> Injuries to the spinal occur due to direct trauma to the spine or pathologies that lead to compression.<sup>2-3</sup>

The most common causes of this condition are: trauma, diving into shallow water, sports accidents and health disorders resulting from violence. Currently has gained prominence traffic accidents.<sup>2-3</sup> Authors point to the association of MSDs with assault firearm, weapon. Since the population most affected by this event are young adult male in full productive activity.<sup>1,4</sup>

This situation is serious because paraplegia and quadriplegia resulting from MSDs are conditions under which the existing clinical treatments do not guarantee full recovery. Thus, affected individuals who acquire a disability generate varying levels of dependence to perform Activities of Daily Living (ADLs). This condition causes intense suffering to those involved and their families and brings serious repercussions for society.<sup>5</sup>

In Brazil there are no official statistics on the number of people with SCI. A study conducted in 2007 estimated that 30 to 40 people / million / year suffer LME, which in Brazil is equivalent to approximately 6,000 new cases per year, 6 A pressing epidemiological studies able to unlock your profile and the profile of individuals who are affected to plan investments in preventing injury and promoting their health and their loved relatives.<sup>1,5</sup>

The rehabilitative treatment is complex and the identification of appropriate care needs assists in selecting interventions that result in the promotion of health of the person with SCI. In the specific case of nursing, these interventions are based on Nursing Diagnoses (DE) identified these people. The DE is the second phase of the nursing process and their proper identification is an essential condition for the success of the nursing care plan and achieves results that promote the health of individuals with SCI.<sup>7,1,4</sup>

The experience of the authors of this study as nursing professors and scholars of the subject allowed contacting the breadth of its physical and psychological effects caused by MSDs, but also observing the weaknesses of nursing care in this scenario to ensure the results needed for rehabilitation person affected by the LME. This experience emerged

the question: which nursing diagnoses that can be identified in subjects with SCI? This question guided the construction of a research project that has been developed over the Masters in Nursing Health Promotion for the identification of diagnoses in the subject with SCI from the theoretical framework of self-care.<sup>1</sup>

The study is justified by the magnitude of the social, physical and psychological issues related to people with SCI, the need for correct identification of the phenomena of interest contributing to the design of the plan of nursing care and to support scientific research on this theme.

## OBJECTIVE

- To identify nursing diagnoses, according to the taxonomy of North American Nursing Diagnosis Association International (NANDA-I) present in subjects with SCI, correlating them with the requirements of universal self-care.

## METHOD

A descriptive study of clinical nature, exploratory case study, permeated by a qualitative approach which was conducted by the Theoretical Framework of Self-Care and the diagnostic taxonomy NANDA-I.<sup>8</sup> The study population comprised all subjects with SCI who sought the Physical Therapy Clinic Regional Hospital Wasteland of Caruaru between the months of May to July 2011. The sampling was made for convenience.

Were adopted as inclusion criteria as the subjects had diagnosis confirmed by a neurologist LME and age less than 18 years. It would be excluded from the study subjects who had physical condition whose handling could cause worsening of your frame. The subjects who met the inclusion criteria were referred to nursing consultation conducted by interview and physical examination with use of all diagnostic methods.<sup>9</sup>

As an instrument for data collection was used historical nursing constructed using the requirements of self-care Theory OREM (1995). The synthesis was carried out from the premises of clinical reasoning.<sup>9</sup> The identification of the defining characteristics led to the proposition of titles diagnoses, and together were described related factors and risk of taxonomy North American Nursing Diagnosis Association International from 2009 to 2011. The securities that occurred in three or more subjects were presented in tables and simple frequency analysis on the Theory of Self-Care.

Identified nine A related requirement Universal Self Care, these occurred in three or more subjects with SCI which leads to observe the great impact that organic LME brings to these subjects. These diagnoses were linked to the occurrence of 29 related factors / risk.

Conforms to the requirements of the National Health and 196/96 regulates research between humans participants were informed about the risks and benefits and the research was initiated by signing the Informed Consent Form (ICF). This was described risks, benefits and guarantee of confidentiality to the participants. The project which derives this study was approved by the Ethics Committee of the State University of Paraíba, as Certificate of Appreciation Presentation for Ethics (CAAE) No 0068.0.133.000-11 in fourteen (14) April 2011 (two thousand and eleven).

RESULTS

We evaluated five subjects, all males aged between thirty and fifty-nine years. As for the causes of LME three were caused by traffic accidents and two for assault, one for weapon and one firearm.

The educational level ranged between first and second degree complete. Two guys were coming at Caruaru and others in surrounding cities. All reported they performed paid professional activities before the event that caused the injury and that these were discontinued after it. The current source of income is from social security benefits.

Through nursing consultation, were identified a total of 12 CD. These characteristics have led to the proposition of nursing diagnoses.

The titles most frequent diagnoses, defining characteristics and related factors are shown in Figure 1:

| DE                                               | F | CD                                                                                                               | F           | FR                                                                                                                                                                                                                   | F                               |
|--------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Imbalanced nutrition less than body requirements | 5 | Absence of information<br>Reports of inadequate food ingestion, smaller than the PDR (recommended daily portion) | 5<br>5      | Impaired ability to ingest food<br>Economic factors                                                                                                                                                                  | 4<br>1                          |
| Constipation                                     | 4 | Decreased frequency<br>Abdominal pain<br>The bulging abdominal percussion                                        | 4<br>1<br>1 | Poor eating habits<br>Insufficient intake of fiber<br>Insufficient intake of fluids<br>Irregular evacuation habits<br>Inadequate dentition<br>Neurological lesion<br>Mobility impaired of the gastrointestinal tract | 4<br>4<br>1<br>2<br>3<br>4<br>4 |
| Urinary incontinence reflex                      | 5 | Inability to voluntarily inhibit bladder emptying<br>Lack of sense of urgency to empty the bladder               | 5<br>5      | Neurological damage above the voiding sacral center                                                                                                                                                                  | 5                               |
| Physical mobility harmed                         | 5 | Change in gait<br>Limited range of motion<br>Limited capacity to carry out the thick motor skills                | 1<br>3<br>3 | Neuromuscular damage<br>Decreased muscle strength<br>Contractures                                                                                                                                                    | 5<br>5<br>1                     |
| Tactile sensory perception disturbed             | 5 | Change in usual response to stimuli                                                                              | 5           | Altered sensory reception<br>Sensorial transmission altered                                                                                                                                                          | 5<br>5                          |
| Risk for impaired skin integrity                 | 5 |                                                                                                                  |             | Sensations harmed<br>Bony prominences<br>Moist skin<br>Excreta<br>Physical immobilization<br>Nutritional state without balance                                                                                       | 5<br>2<br>2<br>3<br>1<br>1      |
| Impaired tissue integrity                        | 3 | Tissue destroyed                                                                                                 | 3           | Physical mobility injured<br>Mechanic factors                                                                                                                                                                        | 3<br>3                          |
| Risk of infection                                | 5 |                                                                                                                  |             | Primary inadequate defenses<br>Invasive procedures<br>Insufficient knowledge to avoid exposition to pathogens                                                                                                        | 4<br>2<br>4                     |
| Risk of lesion                                   |   |                                                                                                                  |             | Sensorial dysfunction<br>Physicals (Injured mobility)<br>Bad nutrition                                                                                                                                               | 3<br>3<br>2                     |

Figure 1. Nursing Diagnoses in accordance with the requirements of universal self-care. Source: Ambulatory of physiotherapy of the regional hospital of the agrestic, Caruaru-Pernambuco-Brazil (2011).

## DISCUSSION

The data for the characterization of the subjects revealed that the LME reaches young adult males and that the etiology of this lesion is associated with violent causes. These data are consistent with other studies around the LME. Among the study subjects was especially traffic accidents and assault with knives and firearms.<sup>2</sup>

12 defining characteristics were identified from the application of the interview and physical examination. The defining characteristics are described by NANDA-I as a set of signs and symptoms of subjects that can be realized by the use of the interview and physical examination.<sup>10</sup> It is important for nurses to recognize these features because they are not only markers for identification of DE as well as after the application of nursing prescriptions functioning as development criteria for evaluating the effectiveness of nursing interventions.

In contrast to the identified DE FR 29, according to NANDA-I (2009-2011) the FR motivate the occurrence of nursing diagnoses and it is they who should direct nursing prescriptions to promote a higher level of health, and emphasizing the importance of their proper identification.

Authors show that the requirements of the Universal Self Care are aimed at maintaining the physical and biological functioning. The universal requirements are common to all human beings and are adjusted according to age, stage of development, environment and other factors specific to each human being.<sup>11</sup>

The DE identified in subjects with SCI who are around these requirements reveal the great impact that the LME organic causes. Point of the need to expand the knowledge of nurses, to identify appropriate nursing diagnoses from the CD to the FR treatment.

We identified six diagnostic and three real risk diagnoses. The actual diagnoses are those that can be validated by the presence of CD. The first diagnosis was identified Imbalanced Nutrition: less than body requirements as evidenced by the lack of information and reporting inadequate food intake, less than the Recommended Daily Portion (PDR) related to economic factors and impaired ability to ingest food. It was observed that the subjects of the study are unaware about the proper distribution of food throughout the day and were not instructed to maintain eating habits consistent with the LME. Besides the lack of information was the most prevalent diagnosis to the emergence of this economic factors,

because the values perceived by the majority of patients were insufficient to maintain the therapeutic demands after injury and acquire food in adequate quantity and quality.

Constipation, identified from the frequency of deletions decreased pain and dullness to palpation; been closely linked to Imbalanced Nutrition. The FR insufficient intake of fiber, fluids and eating habits had disabled connection with the FR DE Imbalanced Nutrition: less than body requirements. Teething inadequate and irregular bowel habits reveal the difficulty caused by the absence of a rehabilitation service that takes into account the full assistance to the subject, which does not meet the therapeutic self-care demands generated by the LME.<sup>5</sup>

The LME has been a major factor for the development of the diagnosis of Urinary Incontinence Reflex (perceived inability to voluntarily inhibit bladder emptying and lack of sense of urgency to empty the bladder, and related neurological injury above the sacral micturition center and Tactile Sensory Perception disturbed (by perceived change in usual response to stimuli and related to altered sensory reception and transmitting sensory change.) These occurrences demonstrate the ability to self-care is influenced by the occurrence of MSDs and points to the need for teaching new skills to meet the demands this deviation health therapies for the prevention of potential complications related.<sup>4</sup>

These complications can be represented by diagnoses Risk Impaired Skin Integrity, Risk for Infection and Risk of Injury in subjects who attended this study,<sup>1</sup> Again the LME appears as collaborative problem important risk factors influencing the lesion development. However, poor nutrition and insufficient knowledge influenced by economic factors and failures as to the completeness assistance to people with disabilities as well as increasing the risk promoting the emergence of diagnostics that decrease the quality of life addition to increasing the risk of the person with SCI.

This risk was represented in the study for the diagnosis of Impaired Tissue Integrity was identified in three subjects by the presence of damaged tissue and was related to the Mobility Impaired Physical and Mechanical Factors (pressure). During the interview it was apparent ignorance about the need for oversight of the body surface, changing positions and using decompression mechanisms, interventions that are used to prevent this complication that has shown frequent among subjects with SCI.<sup>4</sup>

Despite the relevance of the data this study suffered from limitations. During the data collection there was a deficit in the context of neurologists in the unit, so the subjects with suspected LME were referred to other services, which made no reference to outpatient physiotherapy. Thus the number of research participants was small, not allowing to generalize about the diagnosis. On the other hand, subjects who continued to be treated in outpatient physiotherapy faced difficulties in getting to the unit which prolonged the period of data collection.

## CONCLUSION

This study aimed to identify the ED in subjects with SCI treated in outpatient physiotherapy HRA and correlate the diagnoses identified with the requirements of universal self-care theory proposed by Orem.

From the characterization of the study subjects was noticed that both the etiology of MSDs as the profile of the subjects is in agreement with other studies around the theme that reveal how accidents and assaults affecting young adults and males caused the LMEs and pointing the need to prevent these health problems.

The requirements of universal self-care were most affected: the maintenance of sufficient intake of food, the provision of care associated with the process of elimination and excretion and the prevention of risks to human life. They revealed the strong impact that brings in LME organic operation, including development of sequelae.

The identification of nursing diagnoses frequently between these subjects and its correlation with the defining characteristics and related factors using the clinical reasoning process, supported by semiotic methods recognized nursing assists in refining diagnostic investigation around a specific area that is assistance to people with spinal cord injury.

After identifying this need proper care nurses may select interventions based on scientific evidence showing that its implementation brings tangible results in promoting the health of people with spinal cord injury. The adoption of this method of clinical reasoning, supported by a diagnostic taxonomy recognized based on a specific theory of nursing contributes to overcoming a model of professional practice based on empiricism. Thus, this work contributes both to improve the quality of life of people with SCI as well as to increase knowledge about nursing research diagnostic techniques.

Besides, look at the data presented in this research has uncovered a reflection: SUS principles of universality and completeness are not fully applied to persons with disabilities. The difficulty of access by subjects found the multidisciplinary rehabilitative care suggests that these principles are not employed in the reality of life of people with disabilities as well as is not the principle of equity. The difficulty of access to care in a multidisciplinary rehabilitation center submits these subjects to a lower quality of life to what they could achieve. Thus, the level of care that provides tertiary rehabilitation of subjects including social reintegration is hampered in the locality where the study was conducted. It is possible that this situation is repeated in other inner cities that are distant from rehabilitation centers.

Therefore, it is necessary that there is an investment in the internalization of actions and knowledge around multidisciplinary rehabilitation for people with SCI, particularly around the knowledge of nurses for application of the nursing process to these subjects.

Even so, due to the small number of participants is launched suggestion that studies like this are done with a larger number of subjects in which generalizations can be realized. Another suggestion is that these studies are conducted in locations where subjects with SCI are not treated in rehabilitation centers, because the occurrence of diagnoses may be different between subjects who have access to rehabilitative treatment and those who do not.

## REFERENCES

1. Brito MAGM, Bachion MM, Souza JT. Diagnósticos de enfermagem de maior ocorrência em pessoas com lesão medular no contexto do atendimento ambulatorial mediante abordagem baseada no modelo de Orem. Rev eletrônica enferm [Internet]. 2008 [cited 2012 Sept 13];10(1):13-28. Available from: <http://www.fen.ufg.br/revista/v10/n1/v10n1a02.htm>
2. Wong P, Salazar D, Bérninzon L, Rodriguez A, Salazar M, Valderrama H et al. Caracterización de los accidentes de tránsito en la región Callao-Perú, 1996-2004. Rev peru epidemiol. 2009; 13(Peru):1-9.
3. Miranda FL, Henriques SM, Abrahão CM, Gonçalves ND, Tannure MC. Diagnósticos e intervenções de enfermagem identificados em

Vasconcelos AS, França ISX de, Sousa FS de et al.

Nursing diagnosis identified in the...

pacientes com lesão medular: revisão sistemática de literatura. J Nurs UFPE on line [Internet]. 2010 May [cited 2012 Sept 13];4(3):1101-9. Available from: <http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/960>. DOI: 10.5205/reuol.960-7759-2-LE.0403esp201023

4. Vasconcelos AS, França ISX, Coura AS, Sousa FS, Souto RQ, Cartaxo HGO. Nursing interventions on the needs of people with spinal cord injury: an integrative review. Online braz j nurs (Online) [Internet]. 2010 [cited 2010 Dec 2];9(2):]about 5 screens]. Available from: <http://www.objnursing.uff.br/index.php/nursing/article/view/j.1676-4285.2010.3000/674>

5. Bampi LNS, Guilhem D, Lima DD. Qualidade de vida em pessoas com lesão medular traumática: um estudo com o WHOQOL-bref. Rev bras epidemiol [Internet]. 2008[cited 2012 Sept 13];11(1):67-77. Available from: <http://www.scielo.br/pdf/rbepid/v11n1/06.pdf>

6. Venturini DA, Decésaro MN, Marcon SS. Alterações e expectativas vivenciadas pelos indivíduos com lesão raquimedular e suas famílias. Rev Esc Enferm USP [Internet]. 2007 [cited 2012 Sept 13];41(4):589-96. Available from: <http://www.scielo.br/pdf/reeusp/v41n4/07>

7. Melo EM, Albuquerque MP, Aragão RM. Diagnósticos de enfermagem prevalentes na unidade de terapia intensiva de um hospital público. J Nurs UFPE on line [Internet]. 2012 June [cited 2012 Sept 13];6(6):1361-8. Available from: [http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/2514/pdf\\_1243](http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/2514/pdf_1243) DOI: 10.5205/reuol.2365-18138-1-LE.0606201213

8. Polit DF, Beck CT, Hungler BP. Fundamentos de pesquisa em Enfermagem - métodos, avaliação e utilização. Porto Alegre: Artmed, 2004.

9. Potter PA, Perry AG. Fundamentos de Enfermagem. 5th. ed. Rio de Janeiro: Guanabara Koogan, 2009.

10. North American Nursing Diagnosis Association, Diagnósticos de enfermagem da NANDA: definições e classificação: 2009-2011. Porto Alegre: Artmed; 2008.

11. Gallo AR, Pimentel SP, Bonet AL, Adán MC. Gestión del cuidado enfermero en la teoría del déficit de autocuidado. Rev cuba enferm [Internet]. 2009 Dec [cited 2012 Sept 13];25(3-4). Available from: [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0864-03192009000200002&lng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-03192009000200002&lng=es)

12. Awad RA. Neurogenic bowel dysfunction in patients with spinal cord injury, myelomeningocele, multiple sclerosis and Parkinson's disease. World J Gastroenterol. 2011 Dec [cited 2012 Sept 13]; 17(46):5035-48. Available from: <http://www.wjgnet.com/1007-9327/full/v17/i46/5035.htm>. DOI: 10.3748/wjg.v17.i46.5035

Vasconcelos AS, França ISX de, Sousa FS de et al.

Nursing diagnosis identified in the...

Submission: 2013/03/29  
Accepted: 2013/04/06  
Publishing: 2013/05/01

**Corresponding Address**

Adriana Santana de Vasconcelos  
Av. Venezuela, 229 / Bairro Universitário  
CEP: 55.016-470 – Caruaru (PE), Brazil