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# PERCEPTIONS OF ADULTS WITH SPINAL CORD INJURY ON THE SKILLS FOR DAILY ACTIVITIES AND HEALTH INDICATORS IN THE LIGHT OF NOC: DESCRIPTIVE RESEARCH

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## ABSTRACT

**Objective:** Verify the perception of adults with spinal cord injury (SCI) on their skills for daily activities and pair data with health indicators in the light of NOC. **Method:** Cross-sectional study, census and quantitative, conducted in 2008 in UBSF's Campina Grande-PB. 47 people have taken part as sample, who answered a form with indicators domain of the Functional Health of NOC and an Questionnaire A, composed by questions about abilities to perform daily activities. It was performed a pairing between the instruments and used the SPSS to analyze data. **Results:** Cronbach Alpha was 0.752. The items that showed more commitment were: Management of money (80.8%), sexual performance (74%), Leisure (68%), Labor (55%) and ambulation (45%) -  $p < 0.001$ . **Conclusion:** There is impairment on the participants' skills for daily activities. Nurses can help them develop actions of health education and research that contribute to improving public policies for those people.

**Descriptors:** Nursing; Disabled Persons; Activities of Daily Living

## INTRODUCTION

Currently, the incidence of Spinal Cord Injury (SCI) is becoming, around the world, a public health issue due to the growth of episodes of urban violence, such as traffic accidents and assaults with firearms<sup>(1)</sup> and due to the occurrence of neoplastic, viral and bacterial diseases that can intervene in the nerve pathways that connect the brain and muscles<sup>(2)</sup>.

A review, considering the data available around the world, pointed to prevalence rates ranging from 2.23 to 7.55 per 10,000 people and an incidence between 10.4 and 83 per million inhabitants per year<sup>(3)</sup>. In the year 2007, 832,858 users were treated in the health services of Brazil because of external injuries, a relevant number, since the traumatic SCI is the most frequent one<sup>(4)</sup>.

The spinal cord acts as a pathway that communicates brain and various parts of the body, besides being an important regulator centre that controls important functions such as breathing, circulation, urinary and bowel elimination, sexual activity, thermal management and skeletal muscle<sup>(5)</sup>. Thus, an injury in this organ can have serious consequences for those affected, such as deficiencies in the listed functions, and body aches.

Algesic processes<sup>(6)</sup>, the lack of movement due to motor limitations, as well as architectural and attitudinal barriers faced by people with SCI are primarily responsible for the difficulties faced by these individuals to perform activities of daily living (ADLs).

This inability to ADLs in adults with SCI increases their vulnerability to addiction and the risks of more serious health problems. From this perspective, this social segment has specific needs that require specialized long-lasting healthcare<sup>(7)</sup>.

In this context, the therapeutic actions of rehabilitation, during and after the acute SCI period, are important because it helps affected patients to improve skills in order to perform ADLs and implement effective self-care. Studies show that 70 to 80% of people with a complete spinal cord injury with motor power of grade 1 to 2, recover the next neurological level between 3 and 6 months<sup>(8)</sup>. The inclusion in rehabilitation activities means more than the possibility of regression of neurological deficit. It is also linked to the prospect of improvement in ADLs, the decrease in the degree of dependence on carers, improvement in social interaction, the reduction of clinical comorbidities resulting from long periods in bed and, lastly, improvement in quality of life.

An instrument that can be used by nurses in rehabilitation assistance for people with SCI is the Nursing Outcomes Classification (NOC). Its taxonomy is applicable to individuals, families and communities to describe a state, behaviour or perception at a given time, anywhere on the continuum, be it positive or negative. The listed results in the NOC contain indicators that can be used by nurses, allowing a selection of those relevant according to the situation<sup>(9)</sup>. From this perspective, the study's objective is to verify the perception of adults with SCI on their daily activities and to compare the data with health indicators in the light of the NOC. Besides being related to a serious public health issue, the relevance of the study is indicated by the possibility to produce knowledge for academic purposes since it enriches its collection with deeper information that will serve as a source of research and provide material to improve nurse training in order to plan a better nursing rehabilitation care system. It aims at ensuring better health and quality of life for people living with SCI and contributes to the formation of other professionals working in healthcare rehabilitation programs. Furthermore, this study has the potential to generate social impact, indicating points that might stimulate public policies for the disable, so as to minimize the difficulties in (re) inclusion of these people.

## **METHODOLOGY**

It is a cross-sectional quantitative census study conducted in 2008 in the Family Health Basic Units (FHBUs) in Campina Grande-PB. The project was approved by the Ethics Committee of Research of University of Paraiba (UEPB), Protocol nº 0228.0.133.000-07. The ethical principles laid out in Resolution No.196/96 of the National Health were fully respected.

The population considered in this study was all the SCI sufferers registered with the FHBUs of Campina Grande city. A population census was conducted, which allowed the participation of 47 individuals with SCI, of both genders, urban dwellers, over 18 years old, enrolled in one of the 61 existing FHBUs, who have been subjected to some therapeutic action of rehabilitation at least six months before.

Two instruments were used: 1) A form with the Functional Health Domain indicators proposed by NOC, containing the Results: a) Self-Care: Activities of Daily Living (ADLs) that corresponds to the ability to perform daily tasks. b) Self-care: Instrumental Activities of Daily Living (IADLs) that refers to the ability to perform household tasks or activities in the community<sup>(9)</sup>, Online braz. J. nurs. (Online); 10(2) abr-ago. 2011.

2) a questionnaire A formulated by the researchers, consisting of questions about the skills: the ability to manage money; use public transportation; carry out daily activities, leisure, sexual activity; do what is necessary despite pain; feed, dress and bathe themselves; use a wheelchair and perform wheelchair transfer. For this instrument, the question was: To what extent do you think you have the skills to perform tasks of daily living? These two instruments were measured using Likert-type scales, ranging from 1 to 5, considering, for the NOC, the health condition impairment and, for the questionnaire A, aid dependence. The correlation between the scores of these instruments' indicators was established, as shown in Table 1.

The instruments' indicators correlation					
Instruments	Correlation A	Correlation B	Correlation C	Correlation D	Correlation E
<b>NOC</b>	<b>Extremely Impaired</b>	<b>Substantially Impaired</b>	<b>Moderately Impaired</b>	<b>Slightly Impaired</b>	<b>Not Impaired</b>
<b>Questionnaire A</b>	<b>Dependent, don't participate</b>	<b>Need assistant and help of auxiliary mechanism</b>	<b>Need of assistant</b>	<b>Independent, Completely with the help of auxiliary mechanism</b>	
<b>Scores</b>	1	2	3	4	5

**Table 1** - Presentation of the correlation between NOC and Questionnaire A indicators, with each group scores.

Initially, for data collection, the researcher identified people with SCI in the FHBU's. Then, accompanied by the community health worker responsible for the area, they paid home visits to the sufferers. After explaining about the research and having a consent form signed, the instruments were applied and the interviewer placed an X on the Likert scales according to participants' responses. Data were processed using the Statistical Package for the Social Sciences (SPSS), Windows operating system, version 14.0, and displayed in cross tables, enabling the analysis of the relation between Questionnaire A and the NOC indicators. The absolute and simple frequencies were calculated and the chi-square test ( $\chi^2$ ) performed to compare the scale proportions with the data matched, being considered statistically significant  $p < 0.05$ .

The Cronbach's alpha test was used to check the Questionnaire A's internal consistency, considering the values of the Item-Total Correlation, Cronbach's Alpha with Item Deleted and Total Cronbach's Alpha.

## RESULTS

### Gender and age

43 men and four women with an average age of 42.95 years old, under 73 years old, over 19 years old, and standard deviation of  $\pm 14.12$  took part in the study.

### The internal consistency of the Questionnaire A

The internal consistency of the Questionnaire A was verified as shown in Table 1, which indicates that the Total Cronbach's Alpha's value was of 0.752. The reliability of the instrument can also be provided by the acceptable values when each item deleted was considered.

**Table 2** - Questionnaire A tested with total Cronbach's Alpha, total Correlation of corrected items and Alpha with item deleted.

Questionnaire A Items	Total Correlation of corrected items	Cronbach's Alpha with item deleted	Total Cronbach's Alpha
Ability to manage money	0,453	0,748	0,752
Ability to use means of transport	0,368	0,745	
Ability to do work activities	0,384	0,750	
Ability to perform daily activities	0,556	0,733	
Ability to perform sexual activities	0,658	0,750	
Ability to do what is necessary despite pain	0,345	0,734	
Ability to feed themselves	0,494	0,749	
Ability to bathe themselves	0,580	0,754	
Ability to dress themselves	0,330	0,725	
Ability to ambulate	0,364	0,753	
Ability to move in a wheelchair	0,380	0,723	
Ability to perform wheelchair transfer	0,358	0,745	
Ability to perform leisure activities	0,415	0,750	

**Source:** Research data.

### Perception on the skills for the Instrumental Activities of Daily Living

The items that showed greater impairment (extremely or substantially) were: money management (80.8%), sexual performance (74%) and work (55%). On the other hand, lower impairment (slight or no impairment) were: use of public transport (38.3%), pain (30%) and performance of household tasks (35%).

**Table 3** - Distribution of individuals with SCI according to the paired indicators and the Instrumental Activities of Daily Living, Campina Grande-PB, 2008.

Paired Indicators		EC = 1		SC = 2		MC = 3		LC = 4		NC = 5	
NOC	Questionnaire A	n	%	N	%	n	%	n	%	n	%
Manage money	Ability to manage money and having	5	10,6	33	70,2	6	12,8	3	6,4	0	0,0

the needs met

Use public transportation	Ability to use means of transport	8	17,0	14	29,8	7	14,9	13	27,7	5	10,6
Work	Ability to do work activities	14	30,0	12	25,0	11	23,0	7	15,0	3	7,0
Perform household tasks	Ability to perform daily activities	9	19,0	11	23,0	11	23,0	13	28,0	3	7,0
Sexual performance	Ability to perform sexual activities	16	34,0	19	40,0	7	15,0	5	11,0	0	0,0
Pain	Ability to do what is necessary despite pain (physical)	6	13,0	13	27,0	14	30,0	9	19,0	5	11

**Source:** Research data. n = 47;  $\chi^2_{220GL} = 55.44$ ; p < 0.001; EI = Extremely impaired; SI = Substantially impaired; MI = moderately impaired; SI = slightly impaired and NI = Not impaired.

### Perception on the skills for the Instrumental Activities of Daily Living

There was greater impairment (extremely or substantially) in the following items: leisure (68%) and ambulation (45%). Lower impairment (light or no impairment) were: ability to perform wheelchair transfer (91%), bathing (83%), dressing (81%), feeding (76.6%) and moving on a wheelchair (72%).

**Table 4** - Distribution of individuals with SCI according to the paired indicators and Activities of Daily Living, Campina Grande-PB, 2008.

Paired Indicators		EC = 1		SC = 2		MC = 3		LC = 4		NC = 5	
NOC	Questionnaire A	n	%	N	%	n	%	n	%	n	%
Feeding	Ability to feed themselves	2	4,3	2	4,3	7	14,8	9	19,1	27	57,5
Bathing	Ability to bathe themselves	0	0,0	0	0	8	17,0	23	49,0	16	34,5
Dressing	Ability to dress themselves	0	0,0	0	0	9	19,0	23	49,0	15	32,0
Ambulation	Ability to ambulate on their own	12	26,0	09	19	23	49,0	03	6,0	0	0,0
Movement: on wheelchair	Ability to move on a wheelchair	04	9,0	0	0	9	19,0	16	34,0	18	38,0
Performance	Ability to perform	04	9,0	0	0	0	0,0	25	53,0	18	38,0

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Leisure	Ability to perform leisure activities	14	30,0	18	38	12	26,0	1	2,0	2	4
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## DISCUSSION

The inability to manage money in order to meet the needs found in this study may be due to low-income, feature identified in research<sup>(11)</sup> developed in the Sarah Hospital in Brasilia that investigated life quality of 108 SCI sufferers and found that the lack of financial resources has the most overt impact on their quality of life.

As can be seen, the differences between developed and developing countries should be considered in regard to the problems of people with SCI. In this sense, in a systematic review of the literature focusing on health services access for disabled people, the authors<sup>(13)</sup> concluded that public policies in Brazil and in other developing countries should be based on Bioethics Protection (the State protecting the most vulnerable in a collectively way), while developed nations should use Principlism (principles that are applied individually).

In terms of Leisure, the high frequency of people who complained of some degree of impairment is worrying, since, in addition to the physical limitations, these individuals also face

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architectural barriers and difficulty in accessing public transportation because they are not always adapted to this social group. Moreover, economic hardship, prejudice and self prejudice are responsible for impairing the fulfillment of the need for leisure.

Regarding ambulation, the impairment of this function may be related to lack of balance in orthostatic position and ambulation intolerance to distances greater than 50 meters. This finding is reported in another study with SCI sufferers, in which nurses instructions to treat the impaired physical mobility are associated with the prevention and treatment of potential complications such as deep vein thrombosis and pressure ulcers<sup>(15)</sup>. The impaired physical mobility may trigger other conditions that worsen health, aggravating some symptoms that require hospitalization and make the SCI sufferer more aid dependent.

It's been demonstrated the considerable impairment of physical and social aspects, however an integrative<sup>(15)</sup> study review that aimed to identify nursing interventions used in health care for SCI sufferers in pre hospital, hospital or domiciliary care, found that most of nursing interventions aimed at solving physical problems at the expense of subjective ones.

## **IMPLICATIONS FOR NURSING**

There is, in the nursing field, a lack of knowledge in regard to validated instruments that have the potential to measure the SCI sufferers' ability to do everyday activities. The literature<sup>(13)</sup> shows that the basic needs of disabled people (DP) are protected by law which guarantees the enjoyment of legal rights in order to meet their needs in the various aspects of life, however these rights are still not fully respected. It is believed to be necessary to implement specific care to SCI sufferers, preventing them from receiving the same assistance offered to those without disabilities, ignoring their specificities. And despite the evidences of gradual growth of studies related to SCI sufferers, it is still necessary to encourage research and development of strategies and decision making on DP's health. In this context, it is suggested that technological development in the area be encouraged, taking into account the peculiarities that SCI care requires.

It is recommended that nursing care should be implemented in a systematic and holistic manner, considering people with SCI in a comprehensive way, so that physical, social, environmental and subjective needs are addressed. From this perspective, possible strategies to add quality to nursing care for people with spinal cord injury need to ensure: inclusion, in the healthcare courses curriculum, of components that addresses the implications of the International Classification of Functioning and Disability elements, developed by the World Health Organization; participation of health professionals in an interdisciplinary team focused on systematization of humanitarian assistance, solidarity and citizenship. It's important that the professionals help SCI sufferers to recognize the limitations of their body and train them to acquire skills to perform activities of daily living. The primary care professionals should value the home visit as a means of promoting health education for SCI sufferers and their families so that they could learn how to prevent skin complications, such as pressure ulcers, osteoarticular, nefrourologic, digestive, circulatory and respiratory complications. It is Online braz. J. nurs. (Online); 10(2) abr-ago. 2011.



imperative that nurses should learn how to make assertive decisions in situations that require referral, evaluation and interference of other health professionals. For an expanded assistance, it is necessary that professionals develop actions aimed at raising community awareness about the SCI sufferers' need for health services access, education, employment, tourism and leisure. It's also important to develop supportive social networks committed to the reduction of architectural and attitudinal barriers, and the development of social and emotional interactions that contributes to the inclusion of SCI sufferers in society.

## CONCLUSION

The SCI sufferers' perception on their skills for daily activities is not good because of the items Money Management, Sexual Performance, Work, Leisure and Ambulation represent great impairment.

The conclusion is that nurses can contribute to improving the DP's quality of life through home care focused on health education and studies that expand knowledge about this subject and support improvement of public policies on this social sector. It is recommended that rehabilitation nurses invest in publications that focus on their practices in order to give greater visibility to the demands of people with SCI and the relevance of nursing interventions at all levels of complexity of assistance.

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