Doi: 10.11606/issn.2317-0190.v15i3a102938

ORIGINAL ARTICLE

Study of sexual function alterations in women with spinal cord injuries in the city of Ribeirao Preto, state of Sao Paulo, Brazil

Estudo sobre as alterações da função sexual em mulheres com lesão medular resistentes na cidade de Ribeirão Preto/SP

Paula Canova Sodré[1], Ana Cristina Mancussi e Faro[2]

ABSTRACT
It is known that a person who has suffered a spinal cord injury, in addition to sensitivity, locomotion, intestinal and urinary function impairment, regardless of the injury location, must also face sexual function impairment. Each person reacts differently, no matter how similar the injuries can be. The present study, which was an exploratory, descriptive, transversal, applied field study of quantitative nature, was carried out in three hospitals and two physical therapy clinics in the city of Ribeirao Preto, state of Sao Paulo, Brazil, with the objective of evaluating women with spinal cord injuries treated from January 1, 2000 to July 31, 2004. The study population consisted of 81 women. Thirty women were excluded as they did not meet the inclusion criteria: 12 of them had diagnoses that were not related to spinal cord injury, 11 could not be located, 6 died and one refused to participate in the study. Age range in which the spinal cord injury predominated was 18 to 37 years (38%). After the injury, 27% remained single, 28% remained with their partners; regarding the degree of schooling, Grade School predominated (49%) and 9% were illiterate. They presented traumatic etiology (100%) at the lumbar level (53%), followed by cervical (27%), thoracic (16%) and sacral (4%) levels. Of the external causes of the injury, car accident (29%) was the most prevalent, followed by falls (12%), firearm injury, weight lifting, being hit by a car, and motorcycle accident (8% each), shallow-water diving and being beaten up (2% each), and knife injury, sports activities, fall of object on the head, practicing radical sports and fall from one's height added up to 16% of the women and among them, 94% are elderly. The "Changes in Sexual Functioning Questionnaire" (CSFQ) scale showed that 90% of the sample presented sexual dysfunction regarding the sexual pleasure variable, orgasm dysfunction (90%), desire/frequency dysfunction (76%), sexual interest dysfunction (72%) and arousal dysfunction (92%). This study confirmed that the patient with spinal cord injury presents specific complexities and particularities and that the scarcity of studies on the specific sexuality of women with spinal cord injuries does not offer a specific care that encompasses the social, psychological and physical dimensions, as well as the continuing homecare, establishing a rehabilitation process without quality.

KEYWORDS
spinal cord injuries, women, sexuality, reabilitation

RESUMO
É sabido que qualquer pessoa que sofreu algum dano na medula, além de comprometimento da sensibilidade, locomoção, funções intestinais e urinárias, independente da região lesionada, também acomete a função sexual. Cada pessoa reage de maneira diferente por mais semelhante que seja a lesão. O presente estudo exploratório, descritivo, transversal, aplicado de campo, de natureza quantitativa, foi realizado em três hospitais e duas clínicas de fisioterapia na cidade de Ribeirão Preto, SP, com a finalidade de conhecer as mulheres com lesão medular atendidas no período compreendido entre 1º de janeiro de 2000 a 31 de julho de 2004. A população foi composta por 81 mulheres. Deste total, foram excluídas 30 que não atenderam os critérios de inclusão, 12 delas com diagnósticos não relacionados à lesão medular, 11 não localizadas, seis que faleceram e uma que se recusou a participar da pesquisa. A faixa etária que predominou a lesão medular é dos 18 aos 37 anos (38%). Após a lesão, 27% permaneceram solteiras, 28% com seus companheiros, escolaridade nível de ensino fundamental (49%), analfabetismo (9%). Apresentaram etiologia traumática (100%), nível lombar (53%), seguido do cervical (27%), torácica (16%) e sacral (4%,). Das causas externas constatamos acidente automobilístico (29%), 12% de queda, em terceiro encontra-se o ferimento por arma de fogo (FAF), levantamento de peso, atropelamento e acidente de motocicleta 8% cada, mergulho em águas rasas e espancamento, com 2% cada, ferimento por arma branca (FAB), práticas de atividades esportivas e queda de objeto sobre a cabeça, práticas de esportes radicais, queda da própria altura somaram 16% das mulheres, e dentre estas mulheres 94% são idosas. Quanto à escala CSFQ, 90% da amostra apresenta disfunção sexual em relação à variável prazer, disfunção do orgasmo (90%) disfunção do desejo/freqüência (76%) e 72% disfunção do interesse sexual, excitação 92%. Neste estudo podemos confirmar que a paciente com lesão medular, apresenta complexidade e peculiaridades específicas. E que a escassez de estudos sobre sexualidade especificamente feminina da portadora de lesão medular, não oferece um cuidar específico que permeie as diferentes dimensões sociais, psicológicas e físicas, não assegurando um cuidado holístico e a continuidade deste cuidar em domicílio estabelecendo um processo de reabilitação sem qualidade.

PALAVRAS-CHAVE
traumatismos da medula espinal, mulheres, sexualidade, reabilitação

1 Nurse. Master in Adult Health Nursing by the Nursing School of the University of São Paulo, Post-graduation Program in Adult Health Nursing (PROESA), CAPES Fellow. Member of the Research Group (CNPq) on Rehabilitation and Functionality in Trauma-Orthopedic Nursing
2 Assistant Professor of the Nursing School of the University of São Paulo, PROESA Adviser, Coordinator of the Research Group (CNPq) on Rehabilitation and Functionality in Trauma-Orthopedic Nursing

CORRESPONDING AUTHOR:
Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto
Departamento de Enfermagem Geral e Especializada
Paula Canova Sodré
Avenida Bandeirantes, 3900
Ribeirão Preto / SP
Cep 14040-902
E-mail: paulacsodre@yahoo.com.br

Manuscript received on September 04, 2007; accepted on August 16, 2008.

INTRODUCTION

Historically, the interest in the traumatic spinal cord injury (TSCI) dates from 2,500 BC. However, the care given to the victims was limited to the problems that could not be treated.[1] During the I World War, the life expectancy of individuals with TSCI was 6 to 12 months after the injury.[2] The scientific-medical advancement in the 20th century, however, allowed treatment evolution and decrease in the morbimortality, considered the pioneer of innovations, with the creation of a systematized care model that was adopted in the United States of America in the 70s.[1]

The individual with spinal cord injury is the one that has undergone a trauma, or compression of the spinal cord or total or partial rupture of the nervous transmission, thus resulting in the alteration of the normal spinal cord function.[3] The spinal cord injury caused by trauma, or TSCI, is, therefore, an aggression to the spinal cord that can result in alterations of the normal motor, sensitive and autonomic functions. The TSCI occurs in 15 to 20% of vertebral column fractures and the incidence of this type of injury varies from country to country. It is estimated that in Germany, a total of 17 new cases per million inhabitants occur currently; in the USA, the estimates vary from 32 to 52 new cases per million inhabitants and in Brazil, there are around 40 new cases per million inhabitants every year.[4]

The considerations on female sexuality after spinal cord injury are almost inexpressive in the national and international literature, in opposition to publications on male sexual alterations after incipient spinal cord injury, basically considering that women have fewer problems in this area, justified by the fact that women usually undertake the "role" of passiveness during sexual intercourse.[5]

Based on the literature review, we can consider the following alterations in sexual function: amenorrhea onset, mainly in the phase of spinal cord shock, with interruption of menstrual cycles for up to six months, and in some women, for up to one year.

The cause of this alteration is unknown, but it is believed to be an alteration that occur at hypophysary level caused by the trauma and stress of the spinal cord injury; decreased or abolished sensitive function of the genitalia and genital region; decreased or abolished contractile movements of the pelvic area; decreased or abolished genitalia lubrication; decreased or abolished erectile response of the clitoris and respective erectile structures. The frequency and intensity of such modifications is not known, undergoing variations according to the level of the injury.[5]

In cases with complete injuries, the possibilities of achieving an orgasm is abolished; however, there are controversies in the literature. For this reason, we must try and explain to women with SCI to know and explore their own bodies, with this being an interdisciplinary work in rehabilitation. The orgasmic sensation can result in the stimulation of other erogenous zones, such as the nipples, above the injury level. Skin hypersensitivity close to the bordering dermatome has been reported, constituting an actual new erogenous zone.[5]

As for the reproduction, fertility and gestation, we emphasize the importance and the need for integration and cooperation among the physiatrist, the obstetrician and the rehabilitation nurse for better quality assistance to be given to these women.

The difficulty to perceive the onset of labor by patients with injuries above T10 and the possibility of uterine contraction producing an autonomic dysreflexic episode, mainly in patients with injuries above T5 and T6, are fundamental aspects of assistance to the pregnant patient. The regular medical follow-up, necessary tests and specific care make a healthy pregnancy possible,[5] as well as a full and satisfying sexual life, with a family planning that is adequate for the woman throughout her life.

OBJECTIVE

The objective of this study was to identify the sexual function alterations reported by the women with SCI, according to the "Changes in Sexual Functioning Questionnaire" (CSFQ) scale.[6] Additionally, it proposed to characterize the women with SCI regarding age, level of schooling (years of study), civil status, family composition, profession, occupation and the injury level and degree, time of injury as well as the external cause.

METHODS

Study design

This is an exploratory, descriptive, cross-sectional, field (applied), quantitative study.

Research site

The research was carried out in the state of Sao Paulo, in the city of Ribeirao Preto, at a tertiary hospital, two secondary hospitals that attend to DIR XVIII and two physical therapy clinics that helped to compile the population and sample of this study, among them the HCFMRP-USP - Hospital das Clínicas of the School of Medicine of Ribeirao Preto - University of São Paulo (University Hospital in the countryside of the state of São Paulo, classified as a large, tertiary hospital, and reference for specialized treatment by the Sistema Unico de Saude (SUS - Brazilian Public Health Agency) for cities that belong to the Regional Division of Health (DIR-18) of Ribeirao Preto) and its Emergency Unite of HCFMRP-USP, Hospital Santa Casa de Misericordia of Ribeirao Preto (secondary hospital, also a reference for specialized treatment by SUS), Hospital Sociedade Portuguesa de Beneficencia of Ribeirao Preto, Outpatient Clinic of Physical Therapy of UNAERP - Universidade de Ribeirao Preto, Outpatient Clinic of Physical Therapy – Barao de Maua de Ribeirao Preto.

Population and sample

The population consisted of women with TSCI treated at secondary, tertiary hospitals and outpatient clinics of physical therapy in the city of Ribeirao Preto, from January 1, 2000 to 31 of July, 2004. The sample consisted of 51 women and the most part

of this sample was originated from the Hospital das Clínicas of the School of Medicine of de Ribeirao Preto, with an absolute number of 42 women with TSCI, followed by the other institutions with a lower number of patients during the aforementioned period: Hospital Santa Casa with 4 women with TSCI, Hospital Beneficencia with one woman, Clínica UNAERP with 3 women and Clínica Barao de Maua with one woman with TSCI.

Inclusion criteria

Age ≥ 18 years at the moment of the study.
Only women with traumatic spinal cord injury.
At least one year of SCI.
To live in the city of Ribeirao Preto.
To agree to participate in the study by signing the Free and Informed Consent Form .

Exclusion criteria

Age < 18 years at the moment of the study.
To present another diagnosis rather than SCI.
To live out of Ribeirao Preto.
Not being treated at Ribeirao Preto.
Refuse to participate in the study after being informed on it.

Procedures for data collection

Initially, before the study was carried out, the project was analyzed by the Committee of Ethics in Research (CER) of Hospital das Clínicas of the School of Medicine of Ribeirao Preto of the University of São Paulo (HCFMRP-USP), for their appraisal and approval. The CER requested the concordance of the departments that were directly or indirectly involved with the study. The Heads of the Surgery, Anatomy and Neurosurgery Departments of HCFMRP-USP as well as the Orthopedics Department of HCFMRP-USP, the Department of the Nursing Division of HCFMRP-USP, the Department of Social Medicine, the Medical Database of the Social Medicine Department of HCFMRP-USP, the Medical File and Statistics Service of HCFMRP-USP, Department of Superintendence of HCFMRP-USP, Hospital Santa Casa de Misericordia, Hospital Sociedade Portuguesa de Beneficencia, UNAERP Clinic, Barao de Maua Clinic of Ribeirao Preto approved the study.

Subsequently, data collection was carried out at the Database of the Department of Social Medicine CPHD of HCFMRP-USP and at the Medical File and Statistics Service –SAME of HCFMRP-USP, of Hospital Beneficencia Portuguesa, Hospital Santa Casa de Misericordia, UNAERP Physical Therapy Clinic files and Barao de Maua clinic files, with the objective of finding women that had suffered traumatic SCI and were treated in Ribeirao Preto, from January 1, 2000 to July 31, 2004. The search resulted in a population of 31 women, with their respective identification and sociodemographic data, such as name, address, origin, profession, occupation, date of birth, civil status, deaths and mainly, telephone number and address for contact.

After these data were obtained, a search in the files was carried out to identify specific data on spinal cord injury, such as the date it occurred, the type and level of injury. The selected files were read by the researcher before the home visit, in order to record the data related to the spinal cord injury.

Of the total number of 81 women, 30 were excluded as they did not meet the inclusion criteria: 12 of them had had diagnoses that were not related to spinal cord injury, 11 were not located, 6 had died, and one refused to participate in the study.

Triage (two triages were performed):

1: data search at the Database of the Department of Social Medicine CPDH of HCFMRP-USP and the Medical File and Statistics Service – SAME of HCFMRP-USP for women that suffered TSCI and were treated in Ribeirao Preto during the study period. The ICD - International Statistical Classification of Diseases and Related Health Problems – was used :

ICD 10, Tenth Review, with ICD S140 (concussion and edema of cervical spinal cord), S141 (other traumatic injuries of the cervical spinal cord), S241 (other traumatic injuries of the thoracic spinal cord), S341 (other traumatic injuries of the lumbar spinal cord), T093 (traumatic injury of the spinal cord), T913 (sequelae of traumatic injury of the spinal cord), 120 (first cervical vertebra fracture), S121 (second cervical vertebra fracture), fracture of other cervical vertebrae), 127 (multiple fractures of the cervical column), S129 (neck fracture), S220 (thoracic vertebra fracture), S221 (multiple fracture of the thoracic column), S320 (lumbar vertebra fracture), S321 (sacrum fracture), S328 (fractures of other parts of the lumbar-sacral column), S19 (neck trauma), T08 (column fracture), S32.7 (multiple fractures of the lumbar column), S240 (concussion and edema of the thoracic spinal cord) S340. (concussion and edema of the lumbar spinal cord).

The identification data, contact telephone numbers and addresses were recorded.

Triage 2: a search was carried out in the files of the population in order to identify specific data regarding spinal cord injury that would meet the study inclusion and exclusion criteria.

Used tools

In this context, the design and use of the validated questionnaires were carried out based on the reflex of the rehabilitation process, so that the tool would have the adequate reference to the topics of sexuality and spinal cord injury. Two tools were used:

• Demographic and Clinical Data for the Characterization of the Sample: a tool that addressed demographic identification data as well as the spinal cord injury.

• CSFQ-F Changes in Sexual Functioning Questionnaire: it evaluates dysfunctions and changes in the adult sexual function.

Originally structured by Anita H. Clayton and her collaborators, Elizabeth L. McGarvey and Gail J. Clavet, respectively, current vice-president of the department of Psychiatric Medicine of the University of Virginia (USA and area researcher members,[6] the tool was validated for Brazilian Portuguese, as well as for 35 other countries.[7]

This tool consists of two parts: one has questions for the female sex and the second part contains questions for the male sex. For the present study, we used only the questions intended for the female sex, considering their relevance. Its use is indicated for all sexual disorders, dysfunctions and alterations. It has no time limit to be filled out and it can be applied by the researcher alone.[6,8]

The instructions for filling the CFSQ out are: asking the patient to fill out the 14 items in the clinical version of the CSFQ. The patient must put an "X" in the place corresponding to the answer of each item in particular. The patient must choose only one answer for each question. The score of the items in the CSFQ has a numerical value or indicates a particular weight for each answer. For instance: item 1, the answer to "what pleasure do you feel in your sexual life?" has a numerical value of 4. Some items have answers that are inverse to the score, such as, for instance, in item 14 of CSFQ, the answer "Never" has a numerical value of 5 and the answer "Every day" has a value of 1.[6,8]

To calculate the total score of the CSFQ, all values of the answers of the 14 items are added. To calculate the score by subtitle, only the values of the items that correspond to each subtitle are added. To determine whether there is sexual dysfunction, the score protocol must be followed, according to the gender of the study patient. The score for the CSFQ, in the clinical female version, must be assessed according to: whether the patient obtained a score ≤ than the score of any of the scales below, then, there is sexual dysfunction.

The scores for each variable of the female questionnaire are: for Sexual Pleasure: 4.0 (item: 1) Sexual Desire /Frequency: 6.0 (adding item 2 + item 3), Sexual Desire /Interest: 9.0 (adding item 4 + item 5 + item 6), Sexual stimulation/arousal:12.0 (adding item 7 + item 8 + item 9), for Orgasm: 11.0 (adding item 11 + item 12 + item 13) and the Total Result of CSFQ: 41.0 (adding item 1 + item 14).6 Documents regarding the research were sent to the representative of the Mapi Research Trust Institute of the south and north regions of America and the Mapi Research Trust Center of Information and Research, in France, and to the author, Anita Clayton, to use the CSFQ.

Interview

The interview was carried out at two different moments, in a quiet and confidential manner. Its efficacy is justified by the fact that it ascertains the immediate confirmation of information and allows the observation of the interviewee, which guarantees a higher degree of reliability and depth of the collected data.[7]

1° contact: It occurred by telephone, in which the researcher presented her project and her objectives in a simple account, making it easier for the respondent to understand it, setting up a date and time for the interview in the patient's home, after her previous consent.

2° contact: It corresponds to the home interview, itself. The purpose of the study was explained again, as well as the confidential character of the study, using clear and accessible language; the questionnaire was answered only started after the patient signed the Free and Informed Consent Form. As the subject is a quite controversial and intimate one, we chose to apply it individually, preferably at the patient's home and without the identification of the respondents. The second contact was subdivided in:

• 1st moment: we used questionnaire I, which corresponds to the collection of demographic and clinical data for the characterization of the population.

• 2nd moment: to obtain data related to the sexuality, we used the CSFQ-F questionnaire,[7] which evaluates the female sexual function, filled out by the patient herself, without a time limit. The mean time spent was on average 1 (one) hour per woman interviewed.

The results are presented in Tables that contain the study variables, comparisons of interest, with absolute and relative frequencies.

RESULTS

As the present study was a specific and peculiar one, the sociodemographic data are relevant, especially because the patients are females, with physical impairment and the fact that the study is about sexuality. Age is one of these data that can help us understand the picture of sexuality in each phase of female life. We observed that the age range in which there is a predominance of spinal cord injuries is the one from 18 to 37 years, with 38% of the cases. Similar data were found in a study carried out in the city of Maringa, in patients with spinal cord injuries, which showed that 50% of them suffered the trauma between 19 and 38 years of age. The accident, therefore, interrupts dreams and expectations, leading to the need of re-structuring the personal and family context.[7]

As for the changes in the civil status, we observed that before the injury, 41% of the women of the sample were single, 37% were married, 2% were divorced and 20% were widowed. After the injury, we observed that 51 women in the study, or 27%, remained without a steady relationship, 8% had a steady relationship and 43% were married.

Regarding the family composition, researchers have shown how important the family support is in the emotional process of adaptation and a stimulus for the development of activities of daily living (ADL) and rehabilitation.

That is what we perceived in this study - the presence of family members of most of the interviewed individuals: 28% of the women with SCI lived with a partner, 25% lived with the parents, 20% with their children, 24% received support from grandparents, aunts, sisters or daughter-in-laws and 3% lived alone. It is noteworthy the large number of female caregivers that comprise the family structure of women with SCI. These characteristics have been demonstrated by other studies.[9,10]

We observed a predominance of Elementary School regarding

the level of schooling, in 49% of the women. These results were also obtained in a study carried out in the city of Maringa, consisting of 32 individuals and 23 of them (71.9%) presented complete or incomplete Elementary School as the degree of schooling.[11]

Other studies in the city of Sao Paulo showed a predominance of low degree of schooling, with none of the individuals presenting university level and occupation as the income level.[12,13]

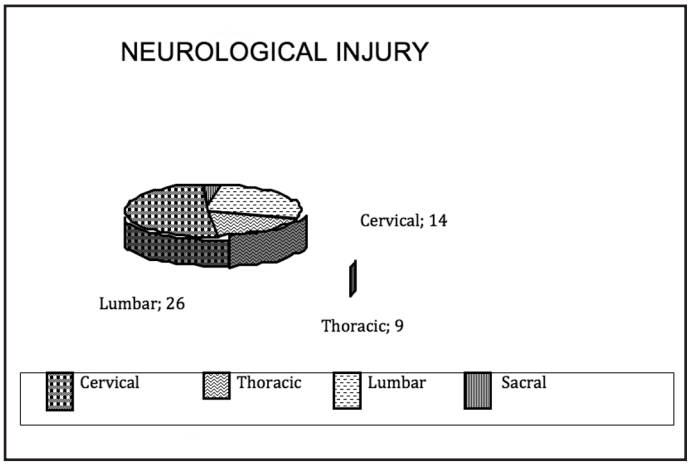

Figure 1
Distribution of women with SCI according to the neurological injury level, Ribeirao Preto, Brazil, EEUSP, 2006.

We can observe a predominance of 98% of women that were assessed with an incomplete degree of spinal cord injury. Of these, 100% presented traumatic etiology and a predominance of lumbar neurological level with 53%, followed by cervical with 27%, thoracic with 16% and sacral with 4%.

It is worth mentioning that the incidence of non-traumatic SCI in women (HTLV I/ II, Myelitis, Syringomyelia, among others) is much higher than the traumatic one, representing approximately 70% of the cases in some studies.[14,15]

Table 1
Distribution of the women with SCI according to external cause, Ribeirao Preto, Brazil, EEUSP, 2006.

External Cause	n	%
Firearm wound	4	8,0
Stabbing wound	1	2,0
Car accident	16	30,0
Hit by car	3	6,0
Sports activities	3	6,0
Weight lifting	4	8,0
Falls	3	6,0
Shallow-water diving	3	6,0
Motorcycle accident	2	4,0
Fall from one's height	8	16,0
Fall of object on the head	1	2,0
Being beaten	3	6,0
Total	51	100,0

Of the external causes seen in Table 1, it is worth mentioning car accidents being responsible for 29.0% of the cases, followed by falls in 12%, in third place, firearm wounds, weight lifting, being hit by a car and motorcycle accident with 8% each. The fourth most prevalent cause was shallow-water diving and being beaten. Lastly, with 2% of prevalence, come stabbing wounds, radical sports activities and fall of object on the head.

Regarding the causes of the SCI, the trauma was caused by several factors, such as the predominance of car accidents, followed by falls, diving accidents and firearm or stabbing wounds, which were grouped as having an exogenous etiology.[11]

It is important to mention that radical sports activities such as mountain climbing, rafting, bungee jumping, rappel, hang gliding, paragliding, etc, are causes of SCI. Additionally, domestic violence, in general perpetrated by husbands, is a very old and common cause of SCI, although little reported. The fall from one's height is another cause worth mentioning, having been observed in 16% of women, of whom 94% were elderly.

The majority of the study population had more than four years of SCI (77%) and only 22% had fewer than 3 years, showing that the population was no longer in the spinal cord shock period and could present rich and recent experiences.

Table 2
Distribution of the answers of the women with SCI on the alterations in sexual activity, according to the CSFQ scale, Ribeirao Preto, Brazil, EEUSP, 2006.

	Altered	Not altered
	Below the cutoff	Above or equal to the cutoff
Pleasure	46 (90.2%)	5 (9.8%)
Desire / Frequency	39 (76.5%)	11 (23.5%)
Desire / Arousal	37 (72.5%)	13 (27.5%)
Stimulation / Arousal	48 (94.1%)	3 (5.9%)
Orgasm / Accomplishment	46 (90.2%)	46 (90.2%)
Total CSFQ	35 (68.6%)	16 (31.4%)

Table 2 shows the absolute number and the frequency of women that presented CSFQ scores, in its female clinical version, that were within the normal and alteration ranges. To determine the scores of alteration in the items of the CSFQ questionnaire, the cutoffs described in Chart 1 were used. Therefore, if a woman with a score ≤ the ones shown in any of the scales below, we considered it a sexual dysfunction,[2,3,6,8] as previously described in Methods.

Chart 1
Alterations of score on the sexual activity of women with spinal cord injury, CSFQ, Ribeirao Preto, Brazil, EEUSP, 2006.

SEXUAL PLEASURE: 4.0 (ITEM: 1);
SEXUAL DESIRE /FREQUENCY: 6.0 (ADDING ITEM 2 + ITEM 3),
SEXUAL DESIRE /INTEREST: 9.0 (ADDING ITEM 4 + ITEM 5 + ITEM 6),
SEXUAL STIMULATION/AROUSAL:12.0 (ADDING ITEM 7 + ITEM 8 + ITEM 9)
ORGASM: 11.0 (ADDING ITEM 11 + ITEM 12 + ITEM 13)

Following all recommendations provided by the tool's authors[2,3], we identified through Table 2 the percentage for the Sexual Pleasure variable of 90.0%, indicating that 90.0% of this population presents a score below the one indicated by the researchers and, consequently, 90.0% of the population present sexual dysfunction concerning the Sexual Pleasure variable.

The same occurs with the Orgasm variable, which presented a percentage of 90.0%, indicating that 90.0% of the study population presents dysfunction concerning the orgasm. The Sexual desire/frequency and the Sexual desire/interest presented, respectively, percentages of 76.0% and 72.0%, which means that 76.0% of this population presents Sexual desire/frequency dysfunction and 72.0% presents dysfunction concerning the sexual interest.

The Sexual arousal variable presented a higher percentage than the other variables, of 92.0%, which means that 92.0% of the population comprising women with spinal injuries in the present study presented dysfunction regarding the sexual arousal. That led us to consider the phases of the process of female sexual response, described by arousal stage, plateau stage, orgasm and resolution stage, and that the arousal variable is the first step toward the other stages.[4]

We can, therefore, hypothesize on the factors impairing this phase of sexual arousal, which could be the non-triggering of peripheral stimuli, touch (reflexogenic) or central stimuli (psychogenic). This phase is controlled mainly by the parasympathetic nervous system, through S2 to S4, with the sympathetic nervous system also being involved. In addition to that, the researchers also point out the stimuli mediated by sight, hearing and smell, by direct perception or through memory, with special participation of the limbic system for the triggering of the this phase of arousal (T11 to L2).[5,12]

Considering the presented facts, the total CSFQ score of the population of the present study was 68% below the expected one, taking into account the minimum score of 41.0 (adding item 1 + item 14).

That is a high percentage, which indicates the need for a closer follow-up of these patients regarding the process of rehabilitation and, mainly, regarding the process of the rehabilitation of the sexuality. That led us to consider all the human, psychological, physical, social, economical, religious, educational, familial, occupational and cultural aspects as well as the sexual aspect, with the latter being in state of emergency, as it has been considered, for some time, a secondary factor in the process of rehabilitation by health professionals. This subject needs intensive and up-to-date care, regarding the field of research and health professionals need to be aware of it, as well as their patients and the general population.

DISCUSSION

We can observe that the age range where the spinal cord injury predominates is the one from 18 to 37 years, with 38% of the cases. After the injury, we observed that of 51 women of the sample only 27% remained single, 85 had a boyfriend, 43% were married and the divorced and widowed remained the same. Regarding the family composition, 28% of the women with SCI live with their partners, 25% with their parents, 20% with their children, 24% receive support from grandparents, aunts, sisters or daughters-in-law and 3% live alone. It is noteworthy the large number of female caregivers that comprise the families of women with SCI. As for schooling, the time of schooling was observed as 9 years, or Elementary School, in 49% of the cases. The percentage of illiteracy is 9% of the population, which reflects the lack of formal education among the population. As for the etiology, the traumatic etiology was 100% and the highest neurological level presented was the lumbar level by 53%, followed by 27% cervical, 16% thoracic and sacral level by 4%. It is noteworthy that, regarding the causes, car accidents accounted for 29% of the cases, followed by 12% of falls, firearm injuries as the third cause, together with weight lifting, being hit by a car and motorcycle accidents with 8% each; the fourth cause was shallow water diving and being beaten, with 2% each, stabbing wounds, sports activities and fall of objet on the head, radical sports such as mountain climbing, rafting, bungee jump, rappel, hang gliding, paragliding, as the cause of SCI, domestic violence perpetrated by the spouse and fall from one's height in 16% of these women and, among them, 94% were elderly. A total of 77% had suffered the injury more than 4 years before and only 22% less than 3 years before.

As for CSFQ, 90% of this study population presented a score below the one indicated by the researchers, and among them, 90% presented sexual dysfunction regarding the Sexual pleasure variable. The same occurred with the Orgasm variable, which presented a percentage of 90% and 76% of this population presented sexual desire/frequency dysfunction; 72% presented sexual interest dysfunction. Regarding the sexual arousal variable, it presented a higher percentage than the other variables, of 92%, which confirms that the sexuality of the patient with SCI presents significant alterations, which are often considered non-priorities or even overlooked during the rehabilitation process.

CONCLUSION

To talk about human sexuality, that is, sex itself, has always been a taboo in the life of the human being, as the unknown generates insecurity and fear. Sex is inherent to the human being and it is through it that life is generated. Regarding the sexuality of an individual with spinal cord injury, the taboo is even bigger, due to the lack of knowledge and information, as well as prejudices that are generated by a sexist culture.

It is known that any individual that has suffered damage to the spinal cord, in addition to experiencing impaired sensitivity, locomotion and intestinal and urinary functions, regardless of the affected region, also suffers from sexual function impairment. As individuals are unique, the injuries are likewise, unique, as well as their alterations, impairments and sequelae. As a result, individuals react different, even when the injuries are similar. In the case of women, there can be lack of sensitivity, and, consequently, the absence of clitorial or vaginal orgasm, but ovulation is preserved and approximately between 3 to 4 months, the menstrual cycles reappear and so does the capacity of getting pregnant.

Considering that these women presented a low injury level, predominantly lumbar and incomplete degree, a higher level of functional independence was expected for all activities.

The importance of the identification of the sexual needs of patient with traumatic spinal cord injury is in establishing objectives for a good-quality and integrated healthcare process, aiming the promotion of health and social inclusion.

Thus, one realizes that studies on this subject increasingly evoke the nurses' need to consider all aspects of the person being cared for, that is, take into account how important it is to treat the human being in its entirety.

Considering that sexuality an important part of the human life, it cannot be denied to those individuals that present a physical disability, as this would be a denial of the human condition itself.[16]

REFERENCES

1. Guttmann, L. Spinal cord injuries: comprehensive management and research. Oxford: Blackwell; 1976.
2. Walleck CA. Central nervous system II: spinal cord injury. In: Cardona VD, Hurn PD, Mason PJB, Scanlon-Schilpp AM, Veise-Berry SW, editors. Trauma nursing: from resuscitation through rehabilitation. 2nd ed. Philadelphia: W.B. Saunders; 1994. p.435-65.
3. Sartori NR, Melo MRAC. Necessidades no cuidado hospitalar do lesado medular. Medicina (Ribeirão Preto). 2002;35(2):151-9.
4. Defino HLA. Trauma raquimedular. Medicina (Ribeirão Preto).1999;32(4):388-400.
5. Maior IMML. Reabilitação sexual do paraplégico e tetraplégico. Rio de Janeiro: Revinter; 1988.
6. Clayton AH, McGarvey EL, Clavet GJ. The Changes in Sexual Functioning Questionnaire (CSFQ): development, reliability, and validity. Psychopharmacol Bull. 1997;33(4):731-45.
7. Polit D, Beck CT, Hungler BP. Fundamentos de pesquisa em enfermagem. 5 ed. Porto Alegre: Artes Médicas; 2004.
8. Clayton AH, Owens JE, McGarvey EL. Assessment of paroxetine-induced sexual dysfunction using the Changes in Sexual Functioning Questionnaire. Psychopharmacol Bull. 1995;31(2):397-413.
9. Faro ACM. Cuidar do lesado medular em casa-a vivência singular do cuidador familiar [tese]. São Paulo: Universidade de São Paulo, Escola de Enfermagem; 1999.
10. Faro ACM. Do diagnóstico à conduta de enfermagem: a trajetória do cuidar na reabilitação do lesado medular [tese]. São Paulo: Universidade de São Paulo, Escola de Enfermagem; 1995.
11. Venturini DA, Decesaro MN, Marcon SS. Conhecendo a história e as condições de vida de indivíduos com lesão medular. Rev Gaúcha Enferm. 2006;27(2):219-29.
12. Delisa JA. Medicina de reabilitação: princípios e prática. São Paulo: Manole; 1992.
13. Loureiro SCC, Faro ACM, Chaves EC. Qualidade de vida sob a ótica de pessoas que apresentam lesão medular. Ver Esc Enferm USP. 1997;31(3):347-67.
14. Sodré PC, Rodrigues EC. O binômio sexualidade feminina e lesão medular: contextualizando alterações sexuais vivenciadas por portadoras de lesão medular inseridas no programa de reabilitação do Hospital Sarah, São Luis / MA [monografia]. São Luis: Hospital do Aparelho Locomotor Hospital Sarah Kubctheck; 2000.
15. Rodrigues EC, Timm M. A úlcera de pressão como obstáculo no processo de reabilitação do lesado medular [monografia]. Brasília: Hospital do Aparelho Locomotor Hospital Sarah Kubctheck; 1999.
16. Salimene ACM. Sexo: caminho para reabilitação. São Paulo: Cortez; 1995.