

## NURSING TELECONSULTATION FOR PEOPLE WITH SPINAL CORD INJURY: NURSES' OPINION ON THE MAIN GUIDELINES

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### ABSTRACT




**Objective:** to identify the opinion of nurses on the main topics to be addressed in the nursing teleconsultation of a telerehabilitation program for spinal cord injuries. **Methods:** descriptive and exploratory study, carried out with experienced nurses in the rehabilitation of people with spinal cord injuries in a network of rehabilitation hospitals. 70 nurses participated in the study. The data were collected through self-administered questionnaires built on the Google Forms® platform and organized in an Excel® spreadsheet. A descriptive statistical analysis of objective responses and a categorical content analysis of discursive responses were performed. **Results:** Nurses considered it important to accompany people with spinal cord injuries in the transition from care to home and to provide guidance through social networks, telephones, and/or applications. It was found that the main topics to be addressed in the nursing teleconsultation in a telerehabilitation service are skin care and bladder and bowel reeducation. **Conclusions:** The nursing teleconsultation allows the exchange of information between the nurse of a specialized rehabilitation service and the person with a spinal cord injury in their home environment, encouraging learning and enabling the person's co-participation and proactivity in managing their self-care.

**DESCRIPTORS:** Spinal Cord Injuries. Telerehabilitation. Rehabilitation Nursing. Telenursing. Enterostomal Therapy.

## TELECONSULTA DE ENFERMAGEM PARA PESSOAS COM LESÃO MEDULAR: OPINIÃO DOS ENFERMEIROS SOBRE AS PRINCIPAIS ORIENTAÇÕES

### RESUMO

**Objetivo:** Identificar a opinião dos enfermeiros sobre os principais temas a serem abordados na teleconsulta de enfermagem de um programa de telerreabilitação em lesão medular. **Métodos:** Estudo descritivo e exploratório, realizado com enfermeiros experientes em reabilitação de pessoas com lesão medular de uma rede de hospitais de reabilitação. Participaram do estudo 70 enfermeiros. Os dados foram coletados por meio de questionários autoaplicáveis construídos na plataforma do Google Forms® e organizados em planilha do Excel®. Realizou-se a análise estatística descritiva das respostas objetivas e análise de conteúdo categorial das respostas discursivas. **Resultados:** Os enfermeiros consideraram importante acompanhar as pessoas com lesão medular na transição do cuidado para o domicílio e fornecer orientações por meio de redes sociais, telefones e/ou aplicativos. Verificou-se que os principais temas a serem abordados na teleconsulta de enfermagem em um serviço de telerreabilitação são cuidados com a pele e reeducação vesical e intestinal. **Conclusão:** A teleconsulta de enfermagem permite a

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troca de informações entre o enfermeiro de um serviço especializado de reabilitação e a pessoa com lesão medular em seu ambiente domiciliar, incentivando o aprendizado, viabilizando a coparticipação e a proatividade da pessoa na gestão do seu autocuidado.

**DESCRITORES:** Traumatismos da medula espinal. Telerreabilitação. Enfermagem em reabilitação. Telenfermagem. Estomaterapia.

## TELECONSULTA DE ENFERMERÍA PARA PERSONAS CON LESIÓN MEDULAR: OPINIÓN DE LAS ENFERMERAS SOBRE LAS PRINCIPALES DIRECTRICES

### RESUMEN

**Objetivo:** identificar la opinión de los enfermeros sobre los principales temas a ser abordados en la teleconsulta de enfermería de un programa de telerehabilitación de lesión medular. **Métodos:** estudio descriptivo y exploratorio, realizado con enfermeras experimentadas en la rehabilitación de personas con lesión medular en una Red de Hospitales de Rehabilitación. 70 enfermeros participaron del estudio. Los datos se recopilaron a través de cuestionarios autoadministrados construidos en la plataforma Google Forms® y organizados en una hoja de cálculo de Excel®. Se realizaron análisis estadísticos descriptivos de las respuestas objetivas y análisis de contenido categórico de las respuestas discursivas. **Resultados:** Los enfermeros consideraron importante acompañar a las personas con lesión medular en la transición del cuidado al domicilio, y brindar orientación a través de redes sociales, teléfonos y/o aplicaciones. Se encontró que los principales temas a ser abordados en la teleconsulta de enfermería en un servicio de telerehabilitación son el cuidado de la piel, la reeducación vesical e intestinal. **Conclusiones:** La teleconsulta de enfermería permite el intercambio de información entre el enfermero de un servicio especializado de rehabilitación y la persona con lesión medular en su entorno domiciliario, incentivando el aprendizaje, posibilitando la coparticipación y proactividad de la persona en la gestión de su autocuidado.

**DESCRIPTORES:** Traumatismos de la Médula Espinal. Telerehabilitación. Enfermería de Rehabilitación. Teleenfermería. Estomaterapia.

## INTRODUCTION

Spinal cord injury (SCI) is a debilitating traumatic condition that can be caused by traumatic injuries, such as vertebral fractures, or non-traumatic causes, such as infections and vascular damage, in which local impairment of the spinal cord occurs, with loss of motor function, sensory and autonomic<sup>1,2</sup>.

The incidence of SCI has increased over the past 30 years, and currently, more than 6 million people worldwide have SCI<sup>3</sup>. In Brazil, no evidence of recent research estimates the incidence and prevalence of SCI. Data from “People with Disabilities” module from the “Continuous National Household Sample Survey”, published in 2022, demonstrated the existence of 18.6 million people with disabilities<sup>4</sup>. A recent study<sup>5</sup> identified a higher occurrence of SCI of traumatic etiology in young adults and males.

Among the repercussions of SCI, the following stand out: negative impact on quality of life, difficulties in social adaptation, the emergence of pain, muscle spasms, pressure injuries and urinary tract infections, in addition to damage to sexual health<sup>6</sup>. Given the losses in functionality and because it mainly affects the young and economically active adult population, the financial impact of SCI is worrying, both due to the loss of productivity and the financial expenses with rehabilitation.

Rehabilitation is a dynamic and important process for people with SCI, which is not limited to physiotherapy but is related to the promotion of well-being, functionality, independence and reduction of other secondary complications in the long term, with the aim of contributing to the process of social reintegration and improve social, physical, psychological and physiological aspects<sup>7</sup>.

With the advent of technology and smartphones in recent years, mobile platforms with health content have also gained popularity in rehabilitation, with positive impacts on mobility and self-management, by facilitating communication between

patient and medical team. Studies show that the use of mobile platforms with health content is associated with greater self-management skills, lower occurrence of urinary tract infections and visits to emergency units<sup>8</sup>.

In this scenario, nurses play an important role in evaluating and providing services to this population, by identifying, minimizing and/or preventing health problems. The telerehabilitation service enables remote access between people with SCI and the rehabilitation team, allowing personalized and specialized care for people who live in distant areas and have difficulty accessing rehabilitation services.

Telenursing allows nurses to work remotely with the patient, in care planning, education and care management<sup>9</sup>. Nursing teleconsultation uses information technology to establish communication between the patient and the nurse in different geographic spaces, offering assistance to resolve problems and determining whether there is an indication for in-person care<sup>10</sup>.

Although it is believed that nursing teleconsultation in a telerehabilitation service has the potential to treat and manage the care of people with SCI, there is insufficient evidence in the literature to recommend it. According to the results of a systematic review carried out in 2022<sup>11</sup>, the available studies demonstrate improvements in quality of life, pressure injury management, functional capacity, depression scores, social isolation, satisfaction and memory of care for people with SCI. However, Data are insufficient to recommend telerehabilitation as an intervention to treat and manage care for people with SCI, and more research is needed to establish its effectiveness.

Until the present, there has been no evidence of telerehabilitation programs for people with SCI in the Brazilian scenario, based on the clinical experience of nurses in the area.

To this end, intending to structure a telerehabilitation program later, this study sought to identify the opinion of nurses on the main topics to be addressed or taught in the nursing teleconsultation of a Neurorehabilitation Program in SCI (NRPSCI) through telerehabilitation.

## METHOD

Descriptive study, with an exploratory approach, carried out with nurses with clinical experience in rehabilitating people with SCI between November 2018 and February 2019. The study setting was the Sarah Rehabilitation Center, made up of nine centers located in different states in Brazil, with rehabilitation programs that admit adults with traumatic and non-traumatic SCI.

The study population comprised all nurses from the Sarah Network with clinical experience in rehabilitating people with SCI working in the NRPSI. Those who were away from their work activities during the questionnaire's application period or refused to participate were excluded. In the Network of Rehabilitation Hospitals where the study occurred, 90 professional nurses worked in the NRPSI. Four of this total were excluded from the study: a nurse on maternity leave, two on sick leave and the research nurse responsible for the present study. Thus, 86 nurses were invited to participate in the research, and 70 accepted the invitation.

The invitation to participate in the study was made via an explanatory institutional email, sending an access link to the Free and Informed Consent Form (ICF) of the research participant and the instrument with the self-administered questionnaire built on the Google platform forms.

The structured questionnaire contained 23 questions (19 multiple choices and 4 essays) with the following variables: I) sociodemographic: date of birth, gender and marital status; II) professional experience: time working at the institution and in the NRPSI and assignment unit; III) need to monitor the patient in the transition from care to home, nursing guidance provided via social networks, telephones and apps, approach to Activities of Daily Living (ADLs); IV) opinion on the importance of maintaining contact with the rehabilitation nurse after hospital discharge to receive guidance on care strategies according to the level of injury, the degree of difficulty of the activity and family dynamics; V) opinion on the main themes and difficulties presented by the person with SCI at home, to be monitored remotely by the rehabilitation nurse.

In the quantitative survey study, the questions about nurses' perception regarding monitoring needs and maintaining contact with the nurse after hospital discharge presented alternatives arranged on a 4-point Likert scale, without the intermediate option, to obtain a response of partial or total agreement or disagreement.

Data were stored and extracted from the Google Forms® data collection platform for statistical analysis. For quantitative analysis, they were organized in an Excel® spreadsheet based on descriptive statistics, including absolute and relative frequencies.

The discursive questions were analyzed from the perspective of categorical content analysis<sup>12</sup>. The reliability study was conducted by analyzing the agreement of the coded responses by two evaluators familiar with the topic, using the Kappa Coefficient and the degree of agreement described by Landis and Koch. With a perfect level of agreement, Kappa values above 0.80 were considered, and with good agreement, values from 0.61 to 0.80 were considered.

The present study is part of a thesis of the Postgraduate Program in Nursing at the University of Brasília, whose execution was approved by the Research Ethics Committee of Hospital SARAH *Centro Brasília* – Federal District (DF), obtaining the Certificate of Presentation for Ethical Appreciation (CAAE) number 98516718.2.0000.0022, following Resolution 466/2012 of the [Brazilian] National Health Council. All participants formally agreed to participate in the study through the free and informed consent form.

## RESULTS

The study involved the participation of 70 nurses, the majority of whom were female (80%), with an average age of 41.5 years (SD = 6.85; Min-Max = 28-61), married (65.71 %), with an average of 14.4 years of work at the institution (SD = 7.27; Min-Max= 5-34) and 10 to 15 years of experience in the rehabilitation of people with SCI (30%). The majority of nurses were assigned to the units: Centro Brasília – Federal District (DF) (35.71%) and Belo Horizonte – Minas Gerais (MG) (24.28%) (Table 1).

**Table 1.** Sociodemographic and professional profile of nurses with expertise in rehabilitating people with SCI from the Sarah Network of Rehabilitation Hospitals, Brazil – 2019.

| Variables   | Categories           | Number (n)  | Percentage(%) | Mean/SD            |
|---|----------------------|-------------|---------------|--------------------|
| Sex   | Female               | 56          | 80            |                    |
|   | Male                 | 14          | 20            |                    |
| Marital status  | Married/Stable union | 46          | 65.71         |                    |
|   | Single               | 15          | 21.42         |                    |
|   | Separated/Divorced   | 08          | 11.42         |                    |
|   | Did not inform       | 01          | 1.42          |                    |
| Stocking unit (FU)                                    | Brasília- Centro     | 25          | 35.71         |                    |
|   | Belo Horizonte       | 17          | 24.28         |                    |
|   | Salvador             | 15          | 21.42         |                    |
|   | São Luiz do Maranhão | 06          | 8.57          |                    |
|   | Fortaleza            | 04          | 5.71          |                    |
|   | Brasília- Lago Norte | 03          | 4.28          |                    |
| Age (years)   | 28-35                | 13          | 18.57         | 32.15 years +2.65  |
|   | 36-45                | 38          | 54.28         | 40.5 years +2.70   |
|   | 46-55                | 16          | 22.85         | 48.18 years +2.42  |
|   | 56-61                | 03          | 4.28          | 59 years +2.16     |
| <b>Total</b>  | <b>28-61</b>         | <b>70</b>   | <b>100</b>    | 41.5 years + 6.85  |
| <b>Length of time working at the hospital (years)</b> | 5-10                 | 27          | 38.57         | 7.62 years + 2.89  |
|   | 11-15                | 14          | 20            | 13.21 years + 1.31 |
|   | 16-20                | 16          | 22.85         | 17.87 years + 1.45 |
|   | 21-25                | 09          | 12.85         | 23.33 years + 1.11 |
|   | 26-34                | 04          | 5.71          | 31.5 years + 3.10  |
|   | <b>Total</b>         | <b>5-34</b> | <b>70</b>     | <b>100</b>         |

Continue...

Table 1. Continuation..

| Variables                     | Categories | Number (n) | Percentage(%) | Mean/SD |
|-------------------------------|------------|------------|---------------|---------|
| Time working at NRPSI (years) | 1-5        | 10         | 14.28         |         |
|                               | 5-10       | 18         | 25.71         |         |
|                               | 10-15      | 21         | 30            |         |
|                               | 15-20      | 12         | 17.14         |         |
|                               | 20-25      | 07         | 10            |         |
|                               | 25-30      | 02         | 2.85          |         |

Source: Prepared by the authors.

The opinion of rehabilitation nurses regarding the importance of monitoring people with SCI in the transition phase of care from the hospital to the home environment is presented in Table 2.

All nurses participating in the research considered it important to monitor people with SCI immediately after discharge from a rehabilitation hospital, and that remote nursing guidance through social networks, telephones and applications could favor continuity of care and the rehabilitation process in the home environment (Table 2).

**Table 2.** Nurses' opinions regarding the importance of monitoring people with SCI after discharge from a rehabilitation program to promote continuity of self-care in the home environment, Brazil – 2019.

| <b>Guide the organization and adequacy of ADLs</b>   |   |                  |    |           |    |                |    |       |     |
|--|---|------------------|----|-----------|----|----------------|----|-------|-----|
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 0                | 0  | 17        | 24 | 53             | 76 | 70    | 100 |
| <b>Monitor and advise on bowel emptying care</b>   |   |                  |    |           |    |                |    |       |     |
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 0                | 0  | 09        | 13 | 61             | 87 | 70    | 100 |
| <b>Monitor and advise on bladder emptying care</b>   |   |                  |    |           |    |                |    |       |     |
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 0                | 0  | 07        | 10 | 63             | 90 | 70    | 100 |
| <b>Monitor and guide skin care</b>   |   |                  |    |           |    |                |    |       |     |
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 0                | 0  | 09        | 13 | 61             | 87 | 70    | 100 |
| <b>Monitor and advise on changes in decubitus, remaining in the wheelchair and pressure relief</b> |   |                  |    |           |    |                |    |       |     |
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 01               | 02 | 10        | 14 | 59             | 84 | 70    | 100 |
| <b>The person with SCI should request assistance for guidance on preventing complications</b>      |   |                  |    |           |    |                |    |       |     |
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 0                | 0  | 15        | 21 | 55             | 79 | 70    | 100 |
| <b>The person with SCI receives remote reminders about planned activities</b>                      |   |                  |    |           |    |                |    |       |     |
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 02               | 03 | 39        | 56 | 29             | 41 | 70    | 100 |

Continue...

Table 2. Continuation...

| Guide care strategies according to the level of SCI, difficulty of the activity and family dynamics |   |                  |   |           |    |                |    |       |     |
|---|---|------------------|---|-----------|----|----------------|----|-------|-----|
| It's not important  |   | Little important |   | Important |    | Very important |    | Total |     |
| n   | % | n                | % | n         | %  | n              | %  | n     | %   |
| 0   | 0 | 0                | 0 | 15        | 21 | 55             | 79 | 70    | 100 |

| Guidance through social networks, to assist in the organization and continuity of care |   |                  |    |           |    |                |    |       |     |
|--|---|------------------|----|-----------|----|----------------|----|-------|-----|
| It's not important   |   | Little important |    | Important |    | Very important |    | Total |     |
| n  | % | n                | %  | n         | %  | n              | %  | n     | %   |
| 0  | 0 | 02               | 03 | 29        | 41 | 39             | 56 | 70    | 100 |

Source: Prepared by the authors.

Nurses consider it important or even very important to approach people with SCI and their caregivers and/or family members about carrying out ADLs in the home environment; monitor and guide skin care and bowel and bladder emptying; and allow the person with SCI to request assistance from the rehabilitation nurse for guidance on preventing complications (Table 2). The nurses also considered it important to guide home care strategies according to the level of SCI, degree of difficulty of the activity and family dynamics.

To evaluate the main topics to be taught in the transition of care to the home environment through telerehabilitation, the following questions were asked: What are the main topics to be monitored remotely (telerehabilitation) by the rehabilitation nurse in preventing complications after discharge from the program rehabilitation? What is the difficulty faced by the patient during bladder retraining at home? What is the main difficulty faced by the patient during intestinal re-education at home? What is the main difficulty faced by the patient during home skincare? The responses were organized in a spreadsheet for coding and data analysis using the categorical content analysis technique.

The reliability study of the responses was evaluated by analyzing the agreement of the codings assigned by the two evaluators for the same response, using the Kappa coefficient (K). The Kappa value ranged from 0.80 to 0.94, indicating excellent, statistically significant agreement ( $p < 0.001$ ) for the majority of responses (Table 3).

**Table 3.** Agreement (Kappa) between evaluators in the categorical analysis of nurses' responses (n=70) on the five main topics to be taught; and statistical significance (p)

| Reliability | Cohen's Kappa | Landis and Koch (1977) | p-value      |
|-------------|---------------|------------------------|--------------|
| Theme1      | 0.94          | Perfect                | $\leq 0.001$ |
| Theme2      | 0.90          | Perfect                | $\leq 0.001$ |
| Theme3      | 0.89          | Perfect                | $\leq 0.001$ |
| Theme4      | 0.80          | Substantial            | $\leq 0.001$ |
| Theme5      | 0.84          | Perfect                | $\leq 0.001$ |

Source: Adapted from Landis and Koch (1977).

The five main topics to be taught to people with SCI during the nursing teleconsultation in a telerehabilitation service, in the nurses' opinion, were the topics of bladder re-education (100%), skin care (98.57%), intestinal reeducation (97.14%), medication regimen (41.42%) and physical activity, sports and physiotherapy (30%) (Table 4).

Table 5 presents nurses' opinions on the main difficulties faced by people with SCI when caring for their skin, bladder and intestines in the home environment. For the nurses participating in the study, the main difficulties in maintaining care with bladder re-education in the home environment are related to social conditions and financial resources; problems with the acquisition of materials and/or medicines (80%); and lack of caregiver, family member and/or support network (30%).

**Table 4 . Main topics to be covered in nursing teleconsultation in a remote rehabilitation service, Brazil – 2019**

| Themes for nursing teleconsultation                                  | (n=70) | %     |
|--|--------|-------|
| Bladder re-education   | 70     | 100   |
| Skin care  | 69     | 98.57 |
| Intestinal re-education  | 68     | 97.14 |
| Medication regimen   | 29     | 41.42 |
| Physical activity, sports, and physical therapy                      | 21     | 30    |
| Changes in lifestyle habits/Behaviors/ADLs/Self-care                 | 16     | 22.85 |
| Disreflexia autonômica   | 13     | 18.57 |
| Neuropathic pain   | 10     | 14.28 |
| Fall Prevention  | 10     | 14.28 |
| Return to work/ Reintegration, Social reintegration/ Support network | 08     | 11.42 |
| Guidance on SCI and comorbidities                                    | 08     | 11.42 |
| Spasticity   | 06     | 8.57  |
| Nutritional education  | 03     | 4.28  |
| Coping/Psychological and behavioral changes                          | 02     | 2.85  |
| Guidelines on dysphagia  | 02     | 2.85  |
| Sexual orientation   | 02     | 2.85  |
| Stoma care   | 01     | 1.42  |
| Access to health services, acquisition of materials/medicines        | 01     | 1.42  |
| Proper use of adaptations (ortheses)                                 | 01     | 1.42  |
| Accessibility and/or other difficulties faced at home                | 01     | 1.42  |

Source: Prepared by the authors.

Regarding difficulties with intestinal re-education, nurses reported the presence of cultures, beliefs, taboos and prejudices, with resistance to performing anal digit stimulation/manual extraction of feces (35.71%), followed by a lack of knowledge and/ or difficulty in recognizing the importance of adhering to care (30%) (Table 5). In the opinion of nurses (n=70), the main difficulties encountered by people when caring for their skin at home are related to a lack of knowledge and/or difficulty in recognizing the importance of adhering to skin care (45.71% ) and the difficulty in performing and/or maintaining adequate pressure relief frequency during ADLs, work and/or school activities (42.85%) (Table 5).

**Table 5. Difficulties faced by people with SCI during bladder and intestinal re-education and skin care in the home environment, in the opinion of rehabilitation nurses in SCI, Brazil – 2019**

| Factors that make home care difficult   | Number (n=70) | Percentage (%) |
|---|---------------|----------------|
| <b>In bladder re-education</b>  |               |                |
| Social conditions and financial resources/Problems with the acquisition of materials and/or medicines | 56            | 80             |
| Lack of caregiver, family member and/or support network   | 21            | 30             |
| Difficulty maintaining attendance and/or reconciling catheterization with ADLs/work/school.           | 10            | 14.28          |
| Lack of knowledge/Difficulty in recognizing the importance of adherence to care/procedure             | 07            | 10             |
| Loss of motivation with incontinence  | 02            | 2.85           |
| Misguided guidance in health services   | 02            | 2.85           |
| Lack of infrastructure/adaptations in the home environment  | 01            | 1.42           |

Continue...

Table 5. Continuation...

| Factors that make home care difficult  | Number (n=70) | Percentage (%) |
|--|---------------|----------------|
| <b>In bladder re-education</b>   |               |                |
| Difficulty coping/psychological issues and acceptance of spinal cord injury  | 01            | 1.42           |
| Difficulty controlling fluid intake  | 01            | 1.42           |
| <b>In intestinal re-education</b>  |               |                |
| Cultures, beliefs, taboos, prejudices. Resistance to performing anal digit stimulation/manual extraction of feces. | 25            | 35.71          |
| Lack of knowledge/Difficulty in recognizing the importance of adherence to care.                                   | 21            | 30             |
| Inadequate eating habits/water intake  | 19            | 27.14          |
| Lack of caregiver, family member and/or support network.   | 16            | 22.85          |
| Social conditions and financial resources/Problems with the acquisition of materials and/or medicines              | 15            | 21.42          |
| Social conditions and financial resources/Problems with the acquisition of materials and/or medicines              | 07            | 10             |
| Difficulty maintaining frequency and/or reconciling bowel emptying with ADLs/work/school.                          | 04            | 5.71           |
| Lack of adequate shower chair  | 03            | 4.28           |
| Preference for laxatives for intestinal emptying   | 02            | 2.85           |
| <b>In skin care</b>  |               |                |
| Lack of knowledge/Difficulty in recognizing the importance of adherence to care.                                   | 32            | 45.71          |
| Difficulty performing and/or maintaining adequate pressure relief frequency during ADL/work/school.                | 30            | 42.85          |
| Lack of caregiver, family member and/or support network  | 25            | 35.71          |
| Social conditions and financial resources/Problems with the acquisition of materials and/or medicines              | 07            | 10             |
| Neglecting daily skin inspection and hydration   | 05            | 7.14           |
| Difficulty accessing health services/products/inadequate care in wound care  | 05            | 7.14           |
| Use of wheelchairs and/or inappropriate cushions or mattresses   | 04            | 5.71           |
| Difficulty coping/psychological issues and acceptance of spinal cord injury  | 02            | 2.85           |
| Lack of infrastructure/adaptations in the home environment.  | 01            | 1.42           |

Source: Prepared by the authors.

## DISCUSSION

The construction of the online research questionnaire on the Google Forms platform and the use of institutional email enabled the simultaneous inclusion of data in different network units, with lower costs, less influence on the researcher and greater convenience for the participant when answering the questions. questionnaires at more opportune times, corroborating data described in other studies<sup>13</sup>.

The disadvantages of applying online questionnaires are the low response rate and the need to obtain rates greater than 80% to reduce the potential for error due to lack of responses<sup>14</sup>. In the present study, the response rate was 81%, which is considered high for this type of study which reduces the potential for errors due to lack of responses.

It was found that the participating nurses were, for the most part, female. This result is in line with other studies that show the presence of a high number of female workers in nursing services, which can be explained by the characteristic of



the profession being based on the act of caring, which, in most cases, is carried out by women<sup>15</sup>. The nursing participants were, for the most part, married or in a stable union, with an average age of 41.5 years and experience of more than five years in the field of work, data similar to the study published by the Federal Nursing Council on the profile of nurses in Brazil<sup>16</sup>.

The present study identified that, in the opinion of nurses, the educational intervention carried out through social networks in the transition from care to home could contribute to the organization and continuity of care at home. Notably, distance health services coordinated by nurses are important for guidance and assistance in addressing psychosocial, clinical and functional issues<sup>17</sup>.

In the present study, the main issues to be addressed in the transition from hospital care to the home environment in a remote service are related to bladder re-education and skin and bowel care. Different studies highlight the recovery of bladder and intestinal continence and the absence of pressure injuries as the highest priorities for people with SCI, as they are associated with greater independence and better quality of life<sup>18,19</sup>. A study carried out with health professionals and individuals with SCI in South Korea<sup>20</sup> identified interest in implementing telerehabilitation services among people with SCI, indicating that the services offer resolution of unmet medical issues of individuals with disabilities, health monitoring, health maintenance, rehabilitation interventions and independence in ADLs. The most prevalent medical issues identified in people with SCI were: urinary tract infection, pressure injury, pain, orthostatic hypotension, osteoporosis with pathological fracture, weight control, depression, pneumonia/acute respiratory distress, and paralytic ileus.

The present study highlighted that the main barriers or difficulties encountered by people with SCI in maintaining self-care at home are related to the acquisition of materials and/or medications to maintain bladder care; the lack of a caregiver, family member and/or support network to help with bladder and skin care; the difficulty in recognizing the importance of taking care of the skin and intestine; difficulty in performing and/or maintaining adequate pressure relief frequency during activities of daily living; and the presence of cultures, beliefs, taboos and prejudices regarding bowel care procedures. Interestingly, by law, the person who performs clean intermittent bladder catheterization is guaranteed the right to receive the materials to perform the procedure. This guarantee of access to materials is a duty of the [Brazilian] Unified Health System (SUS). However, in practice, the materials necessary to perform catheterization are not always provided by municipal health departments in the appropriate quantity and frequency. This difficulty in access may be associated with the dispensing flows of these materials adopted by municipalities.

SCI, in most cases, is a disease that begins acutely, which causes great tension in the family system due to the short period that the family has to promote adjustments in its dynamics. It is worth noting that care for people with SCI can be permanent, generating great emotional distress for caregivers, and it is important to have a good support network to help direct care<sup>21</sup>. In most cases, the support network of people with SCI comprises family members and friends, people from the community, religious institutions, sports associations, health professionals and rehabilitation centers<sup>6</sup>.

In this study, participants reported that one of the main barriers presented by people with SCI when caring for their skin and intestines in the home environment is the difficulty for people to recognize the importance of maintaining care. These results can be attributed to the lack of health literacy, the difficulty in managing the information received in rehabilitation centers in the community, in an uncontrolled environment<sup>22</sup>, or the difficulty in accepting the changes caused by SCI.

Acceptance is fundamental to promoting rehabilitation and often requires sustained behavior changes. The difficulty of acceptance often lies in the lack of recognition of the need to change behavior, associated with genuine unconsciousness or denial of the need for change<sup>23</sup>.

Neurogenic intestinal dysfunction can affect work activities, social relationships and sexual life and cause embarrassment, anxiety and loss of independence in people with SCI<sup>24</sup>.

Rehabilitation after SCI requires prolonged periods of hospitalization in specialized centers, approached by different health professionals so that the person can acquire greater independence and responsibility for their health<sup>22</sup>. However, the period of hospitalization in the rehabilitation center is often insufficient for the person to master the skills necessary for

self-management in the home environment<sup>25</sup>, and it is important for the health system to offer support for these people to easily and continuously access the information they need.

The study had limitations in the sample, as it was obtained by convenience, consisting of nurses from a single network of rehabilitation hospitals.

## CONCLUSION

The study identified three major, most frequent themes to be addressed and developed in practice in health education in a telerehabilitation program for people with SCI: bladder re-education, intestinal re-education and skin care. Among the topics to be addressed are some difficulties faced by people with SCI that could compromise the follow-up of care in the home environment.

These difficulties must be shared with the telerehabilitation nurse and care manager to promote strategies that facilitate the follow-up of care in the community and allow people with SCI to make appropriate choices for their health. In this context, we expect that exchanging information through a telerehabilitation service will allow greater care-related knowledge, enabling co-participation and proactivity of people with SCI in their health treatment.

## AUTHORS' CONTRIBUTIONS

**Substantive scientific and intellectual contributions to the study:** Tabari L, Kamada I; **Conception and drawing:** Tabari L, Kamada I; **Data analysis and interpretation:** Tabari L, Kamada I; **Article writing:** Tabari L, Kamada I; Rabeh SAN, Nogueira PC; **Critical review:** Tabari L, Kamada I; Rabeh SAN, Nogueira PC; **Final approval:** Tabari L, Kamada I, Rabeh SAN, Nogueira PC.

## DATA AVAILABILITY STATEMENT

Data will be provided upon request.

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