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TELENURSING TO PATIENTS WITH VENOUS ULCERS: GUIDELINES PROVIDED AND OUTCOME OF REMOTE MONITORING

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ABSTRACT

Objectives: To identify the guidelines provided to patients with venous ulcers submitted to telenursing and describe the outcome that occurred with patients with venous ulcers monitored remotely. **Method:** Cross-sectional and documentary study, carried out with 159 medical records of patients with venous ulcers submitted to telenursing at an enterostomal therapy clinic in Rio de Janeiro, Brazil. The inclusion criteria were patients with a diagnosis of venous ulcer submitted to Telenursing, from April 2018 to February 2020. Data analysis was performed using descriptive statistics (absolute and relative frequency for categorical variables), aided by the application spreadsheet Microsoft Excel. **Results:** A balance was identified between the participants in relation to gender; had a mean age (standard deviation) of 68.07 (5.28); completed elementary school or incomplete high school; retirees or pensioners. It was found that 40.88% of the patients had at least one underlying disease, predominantly systemic arterial hypertension and diabetes mellitus. The most prevalent guidelines were: resting with the lower limbs elevated, using compressive therapy with elastic stockings or elastic bandage, and changing the secondary dressing at home. **Conclusion:** The findings show the need to expand the nursing actions developed at the clinic, seeking to provide comprehensive health to patients.

DESCRIPTORS: Enterostomal therapy. Telemonitoring. Varicose Ulcer. Comprehensive Health Care.

TELENFERMAGEM A PACIENTES COM ÚLCERAS VENOSAS: ORIENTAÇÕES FORNECIDAS E DESFECHO DO MONITORAMENTO REMOTO

RESUMO

Objetivos: identificar as orientações fornecidas aos pacientes com úlceras venosas (UVs) submetidos à telenfermagem e descrever o desfecho ocorrido com os pacientes com UVs monitorados à distância. **Método:**

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estudo transversal e documental, realizado com 159 prontuários de pacientes com UV submetidos à telenfermagem numa clínica de estomaterapia no Rio de Janeiro. Os critérios de inclusão foram pacientes com diagnóstico de UV submetidos à telenfermagem, de abril de 2018 a fevereiro de 2020. A análise de dados ocorreu por meio de estatística descritiva (frequência absoluta e relativa para as variáveis categóricas), auxiliada por planilha do aplicativo Microsoft Excel. **Resultados:** identificou-se um equilíbrio entre os participantes em relação ao sexo; apresentaram idade média (desvio-padrão) de 68,07 (5,28); ensino fundamental completo ou médio incompleto; aposentados ou pensionistas. Verificou-se que 40,88% dos pacientes possuíam ao menos uma doença de base, predominando hipertensão arterial sistêmica e diabetes mellitus. As orientações mais prevalentes foram: repouso com os membros inferiores elevados, utilização da terapia compressiva com meia elástica ou atadura elástica e realização da troca de curativo secundário em sua residência. **Conclusão:** os achados evidenciam a necessidade de ampliar as ações de enfermagem desenvolvidas na Clínica, buscando proporcionar a saúde integral aos pacientes.

DESCRITORES: Estomaterapia. Telemonitoramento. Úlcera Varicosa. Assistência Integral à Saúde.

TELEENFERMERÍA A PACIENTES CON ÚLCERAS VENOSAS: DIRECTRICES PROPORCIONADAS Y RESULTADO DE LA MONITORIZACIÓN REMOTA

RESUMEN

Objetivos: identificar las orientaciones proporcionadas a los pacientes con úlceras venosas sometidos a Teleenfermería y describir el desenlace ocurrido con los pacientes con úlceras venosas monitorizados a distancia. **Método:** estudio transversal y documental, realizado con 159 prontuarios de pacientes con úlceras venosas sometidos a teleenfermería en una Clínica de Estomaterapia de Rio de Janeiro. Los criterios de inclusión fueron pacientes con diagnóstico de úlcera venosa sometidos a teleenfermería, de abril de 2018 a febrero de 2020. El análisis de datos se realizó mediante estadística descriptiva (frecuencia absoluta y relativa para variables categóricas), auxiliada por la hoja de cálculo de la aplicación Microsoft Excel. **Resultados:** se identificó un equilibrio entre los participantes en relación al género; tenía una edad media (DE) de 68,07 (5,28); primaria completa o secundaria incompleta; jubilados o pensionados. Se encontró que el 40,88% de los pacientes tenían al menos una enfermedad de base, predominantemente Hipertensión Arterial Sistémica y Diabetes Mellitus. Las pautas más prevalentes fueron: reposo con los miembros inferiores elevados, uso de terapia compresiva con medias elásticas o venda elástica y cambio del vendaje secundario en casa. **Conclusión:** los hallazgos muestran la necesidad de ampliar las acciones de enfermería desarrolladas en la Clínica, buscando brindar salud integral a los pacientes.

DESCRIPTORES: Estomaterapia. Telemonitorización. Úlcera Varicosa. Atención Integral de la Salud.

INTRODUCTION

Information and communication technologies (CITs) in the health field have been used for years since radiological images transmitted by telephone in the United States of America emerged. Records were only found about these technologies in 1950, but some speculations persist involving telegraphs and heliographs in medical communication[1].

The growth in the number of older adults and the increase in chronic diseases in developed countries has driven significant investment in the use of technologies, which have been adjusted according to users' needs and technological development over the years. Distance assistance is growing in many western countries to minimize unfavorable impacts on the individual's life and improve their quality of life[1].

In Brazil, the Ministry of Health, responsible for the Health Education Policy, includes the application of ICTs as an alternative and complementary form of health care and as a form of permanent education on the subject[2]. Initially, ICTs in the health area, under the name of *telemedicine*, emerged intending to raise the level of health and the rational use of resources in medicine. However, from the 1990s, the use of these technologies in health work intensified; with this, ICTs reached other professional categories in the health area, including nursing, which acquired the designation *telenursing*[3].

Telenursing is a relatively new health tool still expanding in the profession. However, the use of this technology gained prominence from 2020 onwards, with the implementation of social isolation due to the atypical world scenario caused by the spread of the coronavirus disease 2019 (COVID-19) pandemic, increasing its application[4]. This circumstance also led, in 2022, to the approval of Resolution 696/2022, by the Federal Nursing Council, which standardized telenursing practice and established clear rules for acting in digital health, both in the public and private sectors[5].

Specifically, in stomatherapy assistance, it is crucial to maintain remote monitoring of patients with wounds, stomas and incontinence to reinforce the guidance provided in person, detect possible complications throughout the treatment, and enhance the healing process to avoid the recurrence of injuries or other health changes[6].

In the specific cases of people with venous ulcers (VUs), remote monitoring is necessary not only because of the high recurrence rate but also because of the biopsychosocial repercussions, such as pain and high exudate, changes in self-image and consequent social segregation[7].In this sense, it was considered relevant to develop the present study, with the following objectives: to identify the guidelines provided to patients with VUs submitted to telenursing and to describe the outcome of remote care for these patients.

It is understood that it is relevant to investigate telenursing and its application possibilities, as it is a subject that needs to be addressed in professional practice and training and deepened and disseminated. In addition, it is a practical technology of guidelines for self-care and adherence to treatment, being an essential strategy and an important tool for directing user assistance.

In addition, in the case of people with chronic wounds, with healing difficulties and with a high risk of recurrence, such as VUs, this care strategy is an essential ally for successful treatment[7]. Therefore, it should be investigated, and research results need to be socialized to encourage the implementation of its findings in the various contexts of nursing practice where its performance is possible.

METHOD

The present is a document analysis, cross-sectional and descriptive study, with a quantitative approach, carried out in a reference service in the care of people undergoing stomatherapy in Rio de Janeiro. It should be noted that the object of this study is the guidance provided through telenursing to patients with VU and the outcome of this remote care. This object emerged from an extension project of a public university in Rio de Janeiro called "Telemonitoring in Nursing for Clients in Situation of Stomatherapy: Wounds, Stomies and Incontinence".

Notably, the documents analyzed were the medical records and identification forms of patients with VUs who underwent telenursing, carried out by telephone at the Clínica de Enfermagem em Estomaterapia, located in the Polyclinic belonging to the health complex of a university in the State of Rio de Janeiro. In this place, people with wounds of various causes (stomies and anal and urinary incontinence) are treated coming from the city of Rio de Janeiro.

In addition, information was captured from spreadsheets designed to monitor patients' health conditions; such spreadsheets allow greater control over data from patients monitored remotely and contribute to the systematization of nursing care in stomatherapy.

As for the study population, the following selection criteria were obeyed: patients diagnosed with ulcer of venous etiology after evaluation at the Stomatherapy Nursing Clinic and who underwent telenursing through telephone calls from April 2018 to February 2020. The exclusion criteria were: medical records of people who attended the clinic, affected by ulcers in the lower limbs, with traumatic, neuropathic, mixed (venous and arterial) and arterial etiology.

The choice of this population was justified due to its high incidence and prevalence in the stomatherapy clinic. The initial time frame (2018) was based on the fact that it was the beginning of the extension project, as mentioned above. The final time frame (2020) was due to the COVID-19 pandemic, which made telenursing suffer seasonality; that is, the work process changed, adapting to the health conditions resulting from the pandemic.

Thus, 331 physical records of patients with lower limb ulcers who were being treated at the Stomatherapy Nursing Clinic were checked: 159 (48.04%) with VU; 52 (15.71%) with VU who were not followed up by telenursing; 40 (12.08%)

with traumatic ulcers; 36 (10.88%) with neuropathic ulcers; 26 (7.85%) with mixed ulcers; and 18 (5.44%) with ulcer of arterial etiology. Thus, 159 patients with VU were assisted by telenursing at the stomatherapy clinic, which resulted in collecting and analyzing data from this number of medical records.

Information was initially collected from the medical records of patients with VU records guided by the variables contained in a form prepared by the researchers to validate and provide accuracy to the data found. Subsequently, these variables were analyzed using descriptive statistics (absolute and relative frequency for categorical variables, including the arithmetic, mean and standard deviation of the participant's age), aided by a Microsoft Excel spreadsheet.

The investigation involved collecting data from all medical records of patients with VU assisted by telenursing and was guided by the form above, through which the following variables were collected: gender, age group, level of education, occupation (profession), diseases baseline, identification of the guidelines provided and outcome of the telenursing.

This study complies with Resolution 466/2012 of the National Health Council. Therefore, the macro project of this research, which encompasses the objectives that make up this study section, was submitted to the Research Ethics Committee, obtaining a positive opinion for its development (number 3,573,933). In this sense, the research was conducted within the required ethical standards.

RESULTS

To better understand the study results, we adopted the procedure of describing them from Tables 1–4 that emerged based on the variables listed for such investigation.

Table 1. Sociodemographic characteristics of patients with VU treated at the Stomatherapy Nursing Clinic. Rio de Janeiro, RJ, Brasil, 2021.

Sociodemographic characteristics	N	Frequency(%)	Mean (SD)*
Gender			
Female	81	50.94	
Male	78	49.06	
Age Range			
< 30 years	01	0.63	28 (0)
31 to 59 years	61	38.36	48.70 (7.35)
60 to 79 years	79	49.69	68.07 (5.28)
≥ 80 years	18	11.32	84.22 (2.97)
Instruction level	41	25.78	
No education or incomplete primary education	66	41.51	
Complete primary or incomplete secondary education	33	20.76	
Complete high school or incomplete higher education	06	3.77	
Complete higher education	13	8.18	
No information			
Occupation (profession)	65	40.88	
Retired / pensioner	29	18.24	
Informal or temporary work (without a formal contract)	26	16.36	
Other professional activities (with a formal contract)	24	15.09	
Domestic services (no pay)	10	6.29	
No information	05	3.14	
Jobless	**159**	**100%**	
Total			

(*) DP: desvio-padrão

The sample consisted of patients of both genders and showed a balance in the number of participants, as 81 (50.94%) were women and 78 (49.06%) were men, aged between 60 and 79 years, with an aged mean (SD) of 68.07 (5.28). Another highlight in Table 1 is the respondents' level of education: 66 (41.51%) patients with complete primary or incomplete secondary education were identified. As for the occupation (profession) of the participants, it was observed that 65 (40.88%) were retired or pensioners.

Table 2. Health characterization of patients with VU, according to underlying diseases. Rio de Janeiro, RJ, Brasil, 2021.

Underlying disease*	N	Frequency (%)
Systemic arterial hypertension	106	39.40
Diabetes mellitus	72	26.77
Nothing reported (denies underlying disease)	21	7.81
Peripheral vascular	15	5.58
Cancer	14	5.20
Neurological	07	2.60
Heart disease	06	2.23
Cerebrovascular	05	1.86
Thyroid	05	1.86
Obesity	04	1.49
Pulmonary	03	1.12
Kidney disease	03	1.12
Dyslipidemia	02	0.74
Liver disease	02	0.74
Immunological	02	0.74
Others**	02	0.74
Total	**269**	**100%**
Number of underlying conditions per participant	**N**	**Frequency (%)**
1 underlying disease	65	40.88
2 underlying diseases	51	32.07
≥ 3 underlying diseases	22	13.84
Absent	21	13.21
Total	**159**	**100%**

(*) Underlying disease: there were patients with more than one disease, totaling 269 in the overall sum. (**) Others: category consisting of gastrointestinal and ophthalmological diseases. Source: Elaborated by the authors (2021).

Observing the underlying diseases recorded in Table 2 is understood that systemic arterial hypertension was the most prevalent in those surveyed, present in 106 (39.40%) patients with VU. Diabetes mellitus appeared as the second most pervasive underlying disease, with 72 (26.77%) patients. Still, in the context of underlying conditions, 21 (7.81%) people denied having any disease. In addition, it was found that most patients with VU had at least one underlying disease, resulting in many 65 (40.88%) people; there are 51 patients (32.07%) with two underlying pathologies.

There were 498 guidelines provided to patients undergoing telenursing, that is, more than one guideline per patient. It was identified that 134 (26, 91%) received instructions regarding resting (with lower limbs elevated) and that there were 102 (20.48%) instructions for the use of compressive therapy (elastic stockings or elastic bandage).

Concerning telenursing outcomes, a predominance of new appointments and reschedulings was identified in 55 (34.60%) records, followed by discharge from the Nursing Clinic in Stomatherapy in 29 (18.24%) forms. There were also 24 (15.09%) cases in which patients were not contacted because the phone call was unanswered for various reasons.

Table 3. Telenursing provided guidance to patients with VU from 2018 to February 2020. Rio de Janeiro, RJ, Brasil, 2021.

Guidelines	N	Frequency(%)
Rest (with lower limbs elevated)	134	26.91
Use compression therapy (elastic stockings or elastic bandage)	102	20.48
Change the secondary dressing at home	86	17.27
Moisturize the lower limbs daily	78	15.66
General health guidelines that enable self-care*	57	11.45
Return consultation with a specialist doctor	25	5.02
Call back as soon as the exams are ready	16	3.21
Total	**498**	**100%**

(*) They received guidance regarding a balanced diet, regular walking and increased fluid intake. Source: Elaborated by the authors (2021).

Table 4. Outcomes of telenursing for patients with VU treated at the Stomatherapy Nursing Clinic from 2018 to February 2020. Rio de Janeiro, RJ, Brasil, 2021.

Outcomes	N	Frequency(%)
New bookings and rescheduling of appointments at the clinic	55	34.60
Discharge from the nursing clinic in stomatherapy	29	18.24
Uncontacted patients (missed phone calls)	24	15.09
Termination (after a call communicating the abandonment of treatment)	16	10.06
Return to the family clinic or other health facility	13	8.18
Hospitalization for surgery	09	5.66
The patient moved from the State or was absent for various reasons	06	3.77
Death	05	3.14
Waiting for release from medical discharge after surgery	02	1.26
Total	**159**	**100%**

Source: Elaborated by the authors (2021).

DISCUSSION

About the sociodemographic characteristics of the patients, the present research demonstrated that there was no significant percentage difference between the gender of the participants, being similar to the qualitative approach study developed with 18 people with VU, where there were nine participants of each gender, respectively[9].

However, most studies indicate a predominance of women with VU. It is inferred that this occurs due to hormonal dysregulation during pregnancy, the continuous use of contraceptives or hormone replacement, and other circumstances that exclusively affect women, favoring the onset of chronic venous insufficiency and, consequently, the formation of VU[10,11].

On the other hand, VU in males is predominant in other studies that mainly try to investigate the profile of this population, with emphasis on the implications caused by the ulcer in different aspects of life[11,12]. Thus, it is considered that VU can similarly affect both genders, as revealed in a meta-analysis that indicated that there is no gender difference in leg VUs, especially concerning the healing period[13].

The age group of the population mainly consisted of older adults, corroborating with national and international investigations that show this profile in people with VU[14–16]. Furthermore, the elderly are the population most affected by chronic venous insufficiency; therefore, they are more susceptible to the development of UV due to the nutritional deficit caused by the alteration of many capillaries[17]. Thus, specialized care in stomatherapy is believed to be beneficial for this more vulnerable population, which needs comprehensive health care, thus promoting a better quality of life. Still, regarding the sociodemographic characteristics of patients with VU treated at the Stomatherapy Nursing Clinic, it was possible to verify that the majority of those surveyed had completed primary or incomplete secondary education, diverging from

other investigations carried out in Brazil, in which most of the participants had only incomplete primary education or no instruction[9,11].

In this sense, such data from the present research reveals a differentiated population due to completing the basic studies cycle, which can directly impact the healthcare process[18]. For these patients, telenursing has the potential to be an effective complementary strategy since they can have a better understanding of the teachings about self-care and adherence to treatment[7,19].

Concerning the work activities of the participants, the withdrawal from the labor market because they are retired, or pensioners is justified by their age and corroborates with the national and international literature9,20,21. Furthermore, the elderly, who receive a fixed income from the National Institute of Social Security, have more time available, which may reflect greater adherence to self-care guidelines[22].

Thus, it can be inferred that older adults can adhere to self-care more appropriately. The available time can be used to practice the health guidelines received during face-to-face consultations and reinforced in telenursing. This narrative corroborates a study carried out with forty older adults in a geriatrics/gerontology outpatient clinic located in Minas Gerais, according to which there is evidence that this population, when attending nursing consultations, had the possibility of performing self-care and self-treatment with more remarkable ability and adherence to guidelines[21].

The result of the underlying diseases was in line with the literature since there was a variation in the number of chronic diseases, emphasizing systemic arterial hypertension and diabetes mellitus[7,10,23]. In addition to contributing to the onset of VU, these pre-existing conditions hinder wound healing due to impaired tissue perfusion and increased risk of developing an infection in the wound bed[18].

In this circumstance, studies mention that nursing should not focus only on the local treatment of the lesion since this isolated care is not enough for healing.[18,19] Therefore, when performing telenursing in stomatherapy with patients with VU, it is recommended to consider the control of underlying diseases, especially arterial hypertension and diabetes mellitus. Furthermore, it is believed that the best therapeutic approach is focused on surveillance guidelines for these comorbidities, which may impair wound treatment or cause relapses after healing[23].

In an observational historical cohort carried out at a stomatherapy center in the city of São Paulo, it was revealed that recurrent VUs in the legs were identified mainly in women aged 60 years or older, obese, hypertensive and diabetic; the incidence of recurrence of VUs in the legs of patients with this profile identified in an outpatient clinic is 48.5%. Another critical factor in the results demonstrated that obesity increased by 8.7 times the chances of patients with healed ulcers having an ulcer recurrence[24].

Regarding the guidelines provided to patients assisted through telenursing, it should be noted that resting with the lower limbs elevated is a simple and essential method in the self-care of the person with VU. Complementary measures such as this one aim to reduce venous hypertension's effects by reestablishing effective microcirculation in the lower limbs provided that patients are encouraged to raise their legs above the heart line for 30 minutes, three or four times a day, including during sleep[25].

Compression therapy is considered the first-line treatment for VU; this procedure also stood out among the guidelines for patients undergoing telenursing. In this sense, ambulation associated with using high-compression elastic stockings or compressive bandages is recommended to treat VU successfully and prevent recurrences. To avoid the repetition of VU, compression stockings of 30 to 35 mmHg can be used; in treatment, compression therapy can improve venous hemodynamics due to an external pressure of 35 to 40 mmHg in the ankle gradually lower in the region below the knee[25].

The outcomes of the telenursing practice, observed in Table 4, indicate a high rate of new appointments and rescheduling of appointments at the clinic, which is in line with the literature4, according to which the purpose of telenursing is the provision of care at a distance, in addition to face-to-face consultations, appreciation and the strengthening of the Unified Health System (Sistema Único de Saúde-SUS), by putting into longitudinal practice with patients assisted at a distance.

In this context, it is known that, in addition to the possibility of informing patients of the date and time of the face-to-face appointment to patients, telenursing is also an important strategy, having comprehensive care as its guiding principle[6]. Therefore, remote monitoring has several benefits for the patient and their support network due to monitoring

health conditions through the reception process with qualified listening, thus favoring better adherence to treatment and preventing possible recurrence of lesions[3].

Still, regarding the telenursing outcome, it was found that 29 (18.24%) patients were discharged from the Stomatherapy Nursing Clinic. It is understood that incorporating telenursing expands the actions to provide more comprehensive care and that more patients are discharged. However, the patient's need for knowledge regarding ulcer healing and prevention is still an obstacle, jeopardizing possible satisfactory results from this long-term health condition[26].

In addition, in Table 4, regarding the outcome, we observe that 40 (25.15%) patients were not contacted or left the clinic. In this regard, although telenursing demonstrates the potential for several benefits, it is understood (i) that there is a gap in the care of people living with VU and (ii) that, therefore, several joint actions are necessary for the management of this problem[7]. Thus, it is suggested to expand the actions performed with VU patients, with interprofessional home visits to the patient's residence, to learn about the context in which he is inserted and to promote health education at home, thus guaranteeing comprehensive care.

As a limitation of the study, we highlight that data collection was carried out in only one healthcare setting, making it impossible to develop this study in other care settings, mainly due to the pandemic caused by COVID-19.

CONCLUSION

Data analysis allowed identifying the guidelines provided and describing the outcome of telenursing with patients with VU who were cared for at a distance, thus meeting the proposed objective of the study. Therefore, this investigation enabled the deepening of knowledge about nursing in stomatherapy and the use of telenursing in the context of people with VU assisted through this technology at the Nursing Clinic in Stomatherapy.

The use of telenursing provides a closer follow-up of the alterations that the patient with VU may suffer; in this sense, the study outcomes show the need for the applicability of this technology in clinical practice. Therefore, based on the current scenario identified in the present study, it is proposed as a prospect for implementing broader actions, strengthening the successful nursing care provided in this scenario.

Thus, it is recommended to consolidate the partnerships made with other multidisciplinary team members and associations that can occur through multiple strategies, highlighting, for example, the public notice of the Ministry of Health on the Education Program for Work for Health (PET-Health/Interprofessional).

Programa de Educação pelo Trabalho para a Saúde (PET-Saúde/Interprofissionalidade).

AUTHORS' CONTRIBUTION

Conceptualization: Santos JC and Souza NVDO; **Methodology:** Santos JC and Souza NVDO; **Research:** Santos JC e Souza NVDO; **Writing – First version:** Santos JC; Costa CCP; Farias SNP; Silva PAS; Jesus PBR and Souza NVDO; **Writing – Reviewing & Editing:** Santos JC; Costa CCP; Farias SNP; Silva PAS; Jesus PBR; Costa RN and Souza NVDO; **Financing Acquisition:** Souza NVDO; **Resources:** Souza NVDO; **Supervision:** Souza NVDO.

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Data will be available upon request.

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