ORIGINAL ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

DEVELOPMENT, VALIDATION AND APPLICATION OF A TOOL TO MEASURE WOUND CHARACTERISTICS

DESENVOLVIMENTO, VALIDAÇÃO E APLICAÇÃO DE UM INSTRUMENTO DE CARACTERIZAÇÃO DAS FERIDAS

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ABSTRACT

Introduction: Wounds prevalence vary enormously along countries, usually because studies conducted have heterogeneous characteristics. The present research took place in long term units in Alentejo, Portugal. Aim: The aim of this study is to develop and validate a clinical useful instrument to measure wounds characteristics. Methods: This study was conducted in four stages: (1) Development of the instrument to measure wounds prevalence based on literature review; (2) In a second step, the form was discussed in a focus group interviews with experienced nurses to enhance clinical relevance and usability. (3) Semantic revision based on the answers from the focus group about descriptions and definitions and whether the form was simple and clear to use; (4) A preliminary statistical evaluation (item discrimination and interrater reliability) was conducted. Results: The final instrument has four sections. The first one collects patient background information. The second one, information about diseases present. The third one focus on prevalence of different wounds typology. The last one, is dedicated to nursing time spent during dressing changes. Conclusion: the instrument now available allows to identify number and typology of wounds, describe their grades, location, nursing care demanded and identifies relevant pathologies associated.

Keyword: Cross-Sectional Studies; Epidemiologic Studies; Wounds; Long Term Care; Nursing Homes; Pressure Ulcer.

RESUMO

Introdução: A prevalência das feridas é de grande variabilidade entre países, sobretudo condicionada por estudos de características muito heterogéneas. A presente investigação foi efetuada nas unidades de internamento da Rede Nacional de Cuidados Continuados do Alentejo (RNCCI). Objetivo: Desenvolver e validar um instrumento clínico útil na medição das características das feridas. Método: Estudo desenvolvido em quatro fases: (1) Construção do instrumento; (2) Reformulação do instrumento com discussão num pequeno grupo de enfermeiros da prática clínica para melhorar viabilidade e relevância clínica; (3) Revisão da semântica; (4) Avaliação da confiabilidade entre observadores. Resultados: O instrumento final é constituído por quatro partes. A primeira recolhe variáveis sociodemográficas. A segunda parte inclui as patologias associadas. A terceira recolhe informação sobre a prevalência das diferentes tipologias de feridas. A quarta e última parte do instrumento recolhe informação sobre o tempo de enfermagem dependido na realização do penso e frequência. Conclusão: Este instrumento, agora disponível, permite identificar o número e tipologia das feridas, caracterizar a gravidade, a localização anatómica, os cuidados associados ao tratamento e ainda identificar os antecedentes relevantes do doente.

Plavras-chave: Estudos Transversais; Estudos Epidemiológicos; Feridas; Assistência de Longa Duração; Casa de Repouso; Úlcera por Pressão.

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INTRODUCTION

The National Network of Integrated Care (RNCCI) was an organizational innovation, being founded with the intent to meet new social and healthcare needs of Portuguese people. Wound treatment is one of the main reasons to be admitted to these units, yet many patients' wounds do not fully heal.

Wounds with difficulty in healing are a serious problem in public health. They result in an anatomical and physiological loss of skin integrity, contributing to a problematic with elevated impact in our society, namely with tangible costs (with direct impact on the economy), and others intangible, such as low quality of life or higher morbidity (1-3).

Although there is varied information available about the prevalence of wounds and the number of patients in a certain time period, this data, in and of itself, is not enough to evaluate the impact of the care processes on the clinical results obtained. Several questions remain that are key in this evaluation, as it is important to know the wound healing time, its anatomical location, the patient's base clinical situation; what is the gravity of the clinical situation, what is the nursing care associated with the results obtained?

This data, in its entirety, constitutes an excellent tool for understanding and improving the management of care processes for people with wounds. This understanding is of crucial importance because, as we know (with a stable incidence and with healing times progressively lowering), it is possible to reduce this prevalence.

The knowledge of the data indicated above reveals itself fundamental for the planning of the first steps, so that the processes of care may act upon the causes, thus inhibiting predisposing factors (that will reduce incidence) on one hand, and reducing healing times (reducing prevalence) on another.

Although the prevalence of wounds is exhibited in crescendo (in pressure ulcers, leg ulcers and diabetic wounds), to the present date, there are not valid tools that measure the different wound types: their risk factors and the adverse circumstances associated with them, their localization, the time spent on making a bandage – the history of the patient's wound. Only tools of prevalence of pressure ulcers (UPP) have been used in greater extent (4).

The tool in this proposal for validation is particularly interesting and impactful in the clinical community, for the aging demographic in developed countries has been increasing (5), thus associating this aging to an evident tendency in the increase of incidence and prevalence of health complications, particularly expressive in certain countries (5,6).

Skin changes are what most reflect the effects of aging, seeing as there is more visibility for slow cell renewal, the reduction of the barrier function with the loss of vascular and glandular networks, cellular

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hydration, fibrous tissue, with the loss of elasticity and of resistance – which generates complications and associated morbidity, increasing the risk of developing wounds, namely skin detachment and pressure ulcers (7,8). Additionally, whether due to presence of comorbidity, of certain lifestyles and other social factors of health, there is an increase in healing time. Even worse: there is an increase in risk of living one's entire life, with one or more wounds.

It can be observed that the prevalence of wounds greatly varies among countries, and that the results are conditioned by studies with very heterogeneous characteristics (9). The majority of studies has a regional or institutional scope, lacking uniformity with regards to the methodology or data collection (4,10). On the other hand, existing data refers almost always to wounds with difficulty healing, assuming their global prevalence would be between 1 and 2% for the majority of developed countries (3). Wounds with difficulty in healing include: pressure ulcers, leg ulcers, ulcers of diabetic origin, malignant wounds and burns.

Situating ourselves in the Portuguese reality, it can be observed that Portugal coincides with the international context, and has been described with sectorial studies, attached to some regions or institutions with great variations in terms of methodologies used. The first study of this type in our country, which reports a group of health centers in the Lisbon region, concludes that the prevalence of leg ulcers, evaluated in a period of two weeks, went from 1,41%, being 80% poisonous origin, 5% arterial and 15% mixed origin (11). Later, other studies appeared, namely (12) concerning health centers in the Leiria region, where the prevalence of chronic wounds is 0,84%, the most frequent of these being vascular causes (36%), of which 78% would be poisonous origin.

Keeping with the aging demographic and consequent morbidity, we focus on the institutionalized population at The National Network of Integrated Care (RNCCI), which is an intervention in both Health and Social Support, according to Law n. 101/2006, on June 6th. The Units of Integrated Care of Alentejo (UCCI), are composed of outpatient units and units of admitted patients in order to meet the needs of the aging demographic and its impact, referred to by OCDE. These last units include three typologies with different goals: Units of Convalescence (UC), Units of Medium Duration and Rehabilitation (UMDR) and Units of Long Term Care and Maintenance (ULDM). The Units of Palliative Care (UCP), once belonging to RNCCI, were in the meantime dissociated, due to the National Network of Palliative Care (13) (Law n. 136/2015, July 28th).

In relation to the characterization of patients, the population of RNCCI is predominantly composed of people older than 65 years (83,2% in 2020). Among these, the population of 80 years represents 50,9% of

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the total, (51,9% in the first semester of 2019), with greater prevalence of the female sex (55%) (14). In relation to associated diagnostics, vascular cerebral pathology prevails (24,8%), hip fractures (12%) and chronic skin ulcer (9,4%) (14).

However, the greatest reason of referencing to the RNCCI is dependence on carrying out activities in daily life (90,4%), with the need for treatment of wounds / pressure ulcers present in 37% of referenced patients (14). Recent data (14) indicates the incidence of pressure ulcers, in the assisted/institutionalized population at the RNCCI, was 3,7% and the prevalence of UPP was 16,4%.

The time for healing UPP is high, seeing as the majority of patients with evolution times greater to one year are in Units of Convalescence (UC) and Units of Medium Duration and Rehabilitation (UMDR), respectively 2,5% and 9,9%.

Regarding this identified reality, it is indispensable to find out more about the risk factors associated with wound development and the most appropriate methods to reduce their incidence and healing time.

The study we carried out has as its goal to create an tool capable of characterizing the severity of wounds, identifying their anatomical location and the clinical background of the patient, in order to facilitate the diagnostic for later intervention.

We think that this tool, until the present moment nonexistent in Portugal, with the information that it adds and the standardization of the data collection that it institutes, will increase the knowledge on the reality of patients with wounds and promote, for them, benefits in health and quality of life.

Following this train of thought (10, 15, 16), it will also allow for the development, in a stimulating fashion, of activities of institutional benchmarking of quality projects carried out with success in the institutionalized citizens in UCCI and in other institutions in the country.

METHOD

Design of the study

This is a study of development and validation of a tool which characterizes wounds, in four phases: (1) Building the tool, based on literature and expert opinions; (2) Reformulation of the tool with small-group discussion of clinical nurses to improve the viability and clinical relevance, Delphi panel; (3) Review of the semantics of the tool; (4) Evaluation of reliability among observers.

Phase 1 – Building the instrument

Important components were extracted from the existing tools evaluated in systematic revisions or meta-analyses (17) and international requirements (10), to obtain information in the following areas: sociodemographic characteristics of patients; risk factors and adverse circumstances; wound typology, anatomical localization and their time of duration; time and frequency of

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making a bandage on the most complex wound.

A group of 5 experts from the Portuguese Society of Wounds (ELCOS), 3 specialized nurses with advanced training in wounds and with more than 10 years of experience, 1 general surgeon and 1 nurse with a doctorate degree in multimedia engineering, were a prototype of the tool, based on the criteria of the aforementioned areas.

Phase 2 – Validity of the content

This phase refers to the level in which the content of the tool adequately reflects the construct in which it is being measured. The validity of content represents the initial effort to import the validation of construct of the tool (18). After elaborating the tool, a conversation follows with 10 clinical nurses to increase the clinical relevance and utility. The nurses were selected by convenience, seeing as they were group coordinators of wound prevention and treatment in different institutions. In each meeting nurses were asked to apply the new version of the tool to 10 patients in their institution and to comment on it. Three virtual meetings took place, and there were no remaining suggestions for improvement. Suggestions for improvement, which were approved by unanimity or majority, were included in the following version of the tool. The remaining items were revised or eliminated.

Phase 3 – Tool Semantics

An instruction manual was made about the meaning of each item evaluated on the tool, available at *www.sociedadeferidas.pt*. All were multiple choice questions, except for age, place of residence and time for applying bandage, in order to facilitate its completion. The first part of the tool collects sociodemographic data, such as age, gender, civil state, type of family classified according to the International Classification for Nursing Practice (ICNP, version 2018) and the place of residence.

Pathologies and adverse circumstances that were evaluated were grouped afterwards in the 19 groups of diseases defined in the International Classification of Diseases (ICD-10) of the World Health Organization. The different wound typologies were classified according to those defined by ICNP. Pressure ulcers and injuries from humidity were classified according to the European Pressure Ulcer Advisory Panel (19). Definitions of surgical wound, fistula and abscess were taken from the European Centre for Disease Prevention and Control.

Phase 4 – Reliability

The reliability of the instrument, this is its capacity to reproduce a result consistently in time and space, or from two viewpoints, constitutes one of the main criteria of evaluation of tool quality (20). Two institutions in the RNCCI were selected in which two nurses observed a convenient

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sample of 16 patients. Each on completed one tool per patient independently.

Location and study period

The present investigation was carried out in the units of admitted patients in the network of long-term care in Alentejo, encompassing the UCCI of Coastal Alentejo, Portalegre, Évora and Beja districts. The Alentejo district, located in southern Portugal, is characterized by its great geographical area, by a population composed mostly of socioeconomic difficulties, aged and with several morbidities (6,14). This study also includes data from two palliative care units which remain in the Alentejo RNCCI to answer the needs of palliative situations of low and moderate complexity (21,22).

Initial application

An initial observation was made with the application of the tool, in the first two weeks of February 2018, of all patients admitted in the RNCCI units in Alentejo. Healthcare professionals were trained in how to complete the tool through the availability of a document with instructions on its completion.

Treatment and Analysis of data

The data was collected in computer support, through a link available to each nurse who was responsible for collecting information. These were stored in a database by ELCOS – Portuguese Society of Wounds.

The Shapiro-Wilk teste was used to evaluate the normality of various numericals and the Levene test to evaluate the homogeneity of variances. The Wilcoxon Mann- Whitney test was used to evaluate if there were significant differences in the number of risk factors/previous history by gender. To measure the correlation between the number of risk factors/ previous history and age, the correlation coefficient of Spearman was used. To measure the correlation between the risk factors/background and the number of wounds, as well as the relation between the duration of the most serious wound and the frequency of bandage change, the coefficient of Kendall was used.

To measure the correlation among observers, the discrepancies in answers were measured. The severity of the discrepancies was classified as slight or severe. The discrepancies in previous history, typology, origin and duration in years of wounds were considered sever because they have important implications in results and future interventions. The discrepancies in sociodemographic background, duration in days and classification of pressure ulcers by category were considered slight, because they do not have great implication in the results and even among experts the category of the UPP is a source of disagreement.

To evaluate if there was relation between the severity of the wound and its origin, and between the location of the most

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serious wound and the number of interventions on that wound, the test of chi-square of independence. To evaluate if there was significant in the duration of the wound based on its severity, the Kruskal-Wallis test was used.

All statistical analysis was done with the help of *software R*, version 4.0.3. The level of considered significance was 5%.

Ethical aspects

The present study was approved by the ethical commission of the Regional Health Administration of Alentejo.

RESULTS

The final instrument is available at https://forms.gle/cZiWuFsqdMySm5te9

Phase 1

The final tool is composed of four parts. The first part collects sociodemographic variables (place of data registry, age and gender of patient, civil state, type of family, academic qualifications and district of residency.

The second part includes associated pathologies (addictive; autoimmune; cardiac; surgical; dermatological; endocrinal; gastric; hematological; neoplastic; neurological; obstetric/gynelogical; orthopedic; pediatric/neonatal; psychiatric; renal; respiratory; rheumatological; vascular and other) and adverse circumstances (malnutrition; immobility; use of wheelchair and other).

The third part of the questionnaire collects information on the prevalence of different typologies of wounds (venous leg ulcer; arterial leg ulcer; leg ulcer of unknown cause; neuropathic diabetic foot ulcer; pressure ulcer cat.1; pressure ulcer cat.2; pressure ulcer cat.3; pressure ulcer cat.4; non-classifiable pressure ulcer; humidity wound; malignant wound; surgical wound; traumatic wound; burn; fistula; abscess and other). The register of the anatomical location begins with the most serious wound (life-threatening, or in the case of several wounds with same level of severity, that one which is deepest) and allows for registry of up to six wounds per patient. Associated to each wound is also the origin of place (residence; hospital, elderly home; continued care unit in national network; primary health care unit (UCSP)) and duration (in years, months and days).

The fourth and last part of the tool, has the goal of collecting information on nursing time depending on the application of bandage to most severe wound and frequency of doing so (option of more than once a day or number of days per week).

Phase 2 and 3

The instrument was changed according to the opinions of practicing nurses. The main changes are described here. In the first group the questions concerning sociodemographic profile: the area of

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residence was substituted by district of usual residence due to presenting more clarity for what was asked; the question on the background/risk factors went from 23 items to 19 groups of pathology, due to an initial great percentage of answers with "other"; the adverse circumstance of "sedentarism" was removed due to being already included in the adverse circumstance immobility. In the second group of questions on the nosology of wounds, the option "fistula" was added to the typology of wounds; the option of who applies the bandage (nurse or informal caregiver) was removed because in all the evaluated institutions this is the responsibility of the nurse. The figure initially present for filling out the anatomical location was frequently not filled out, so it was removed and substituted by options with different anatomical localizations.

The questionnaire initially available on paper was difficult to fill out because of the high number of questions on a single sheet, so that it became available afterwards only in digital format.

Phase 4

To measure the reliability of the instrument, it was applied by two observers in a random sample of 16 patients. Out of 81 variables collected in the tool by two nurses, independently, 65 (80%) were filled out in an identical fashion. The details of the variables with at least one discrepancy in the data collection are present in Table 1, together with the level of discrepancy by severity. Out of 37 wounds observed, three (8%) had serious discrepancies in at least one variable between two observations, and 10 (27%) had weak discrepancies in at least one variable.

Table 1 – Discrepancies among observers

Variable	Discrepancy	Weak	Severe
Age	1	1 (81/89)	
Academic level	1	1 (<4, 4 years)	
Pathologies	7		7: omission of a comorbidity
Adverse circumstances	1		1: omission of an adverse circumstance
Typology of wound	3	2 (cat 3/4 UPP)	1 (typology)
Origin of wound	1		1 (hospital/residence)
Duration in years	1		1 (0/2)
Duration in weeks	1	1 (0/1)	
Typology of wound	1	1 (cat 3/4 UPP)	
Duration in weeks	1	1 (1/2)	
Duration in days	1	1 (2/4)	
Typology of wound	2	1 (cat 3/4 UPP)	1 (typology)

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Localization	2		1 (localization) 1: omission of localization
Typology	2	1 (cat 2/3 UPP)	1 (typology)
Location	1		1(localization)

Source: The authors

Initial application

The tool was applied in 138 of 780 admitted patients in the UCII of RNCCI in Alentejo, who presented at least one would (prevalence 17,7%). The prevalence was higher in UMDR (N=65/231, 28,1%) and lower in ULDM (N=47/423, 11,1%).

A little more than half of the patients (53%) are of the female gender, with ages between 40 and 97 years, the average age being 83 years (Chart 2). Almost 4 in 5 patients are in ULDM or UMDR:

About 3 in 4 patients have 2 to 5 pathologies/adverse circumstances (Chart 2), the most common being: hypertension (62,3%), stroke (36,2%), immobility (36,2%), diabetes (29%), dyslipidemia (23,9%) e heart failure (21,0%). The number of risk factors does not differ significantly between genders (Me_{Masc}=4; Me_{Fem}=4; p=0,772) and is unrelated to age (r_s = –0,068, p = 0,432).

Chart 2 – Characteristics of participants with ≥1 wound, N (%)

Variable			**Feminine (N=73)**	**Masculine (N=65)**	**All (N=138)**
Age	Median (IIQ)		84 (76-87)	81 (72-87)	83 (75-87)
	Categorias	40-49	2 (2.7)	2 (3.1)	4 (2.9)
	N (%)	50-59	2 (2.7)	8 (12.3)	10 (7.3)
		60-69	7 (9.6)	4 (6.2)	11 (8.0)
		70-79	14 (19.2)	15 (23.0)	29 (21.0)
		80-89	38 (52.1)	29 (44.6)	67 (48.6)
		≥90	10 (13.7)	7 (10.8)	17 (12.3)
Unit	N (%)	UMDR	40 (54.8)	25 (38.5)	65 (47.1)
		ULDM	23 (31.5)	24 (36.9)	47 (34.1)
		UC	10 (13.7)	13 (20.0)	23 (16.7)
		UCP	0 (0)	3 (4.6)	3 (2.2)
Previous history/ risk factors	Median (IIQ)		4 (3-5)	4 (2-5)	4 (2-5)
	Categories	0-1	5 (6.9)	4 (6.2)	9 (6.5)
	N (%)	2-3	30 (41.1)	27 (41.5)	57 (41.3)
		4-5	22 (30.1)	24 (36.9)	46 (33.3)
		≥6	16 (21.9)	10 (15.4)	26 (18.8)
N.º of wounds	Median (IIQ)		1 (1-2)	1 (1-3)	1 (1-2)
	Categories	1	39 (53.4)	35 (53.9)	74 (53.6)
	N (%)	2	21 (28.8)	13 (20.0)	34 (24.6)

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3	8 (11.0)	10 (15.4)	18 (13.0)
≥4	5 (6.9)	7 (10.8)	12 (8.7)

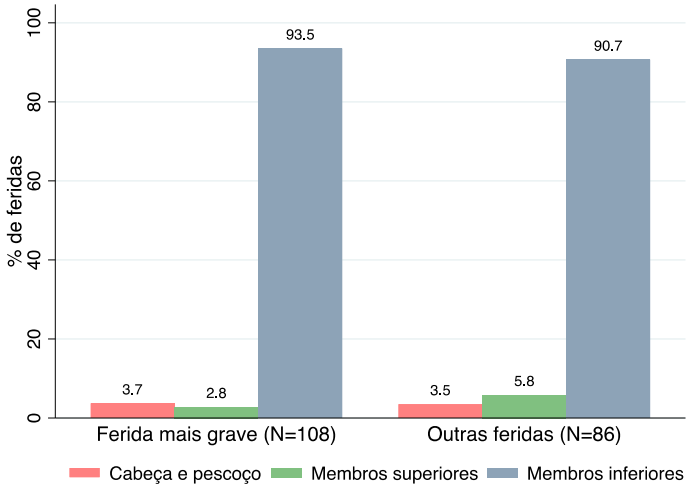
IIQ = iinterquartile interval

Source: The authors

Less than half of patients had more than one wound and almost 1 in 4 have 2 wounds (Table 2). The total number of wounds per patient does not differ between genders (Me_{Masc}=1; Me_{Fem}=1; p=0,701) and is not correlated to the number of antecedents/adverse factors (r_τ = –0,013, p = 0,848). There is no significant difference in the age of patients by number of wounds (p=0,527).

A total of 255 wounds were indicated, distributed in more than 60 different locations. Of the wounds which were registered with their location (194), the majority were in inferior members (92%). There is no difference in regards to the distribution between genders. (Chart 1).

Figure 1- Localization of wounds by severity



Source: The authors

The most common wound localization was in the sacrococcygeal region (23,2%), calcaneus (20,6%) and trochanter (20,1%), seeing as these localizations were also most frequent in first and second most severe wounds. The wounds with severity 3 or higher are almost always located in the malleolus (28,9%), trochanter (26,3%) and calcaneus (23,7%).

Whichever the severity of the wound, the most common wound is the pressure ulcer in category 4 (Figure 2a). The second and third typologies of most common wounds vary with the severity of the wound, and the

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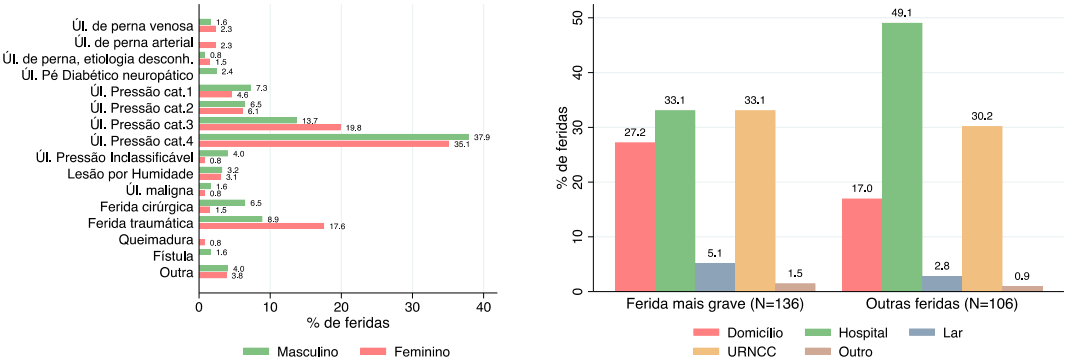
most prominent are pressure ulcers from category 3, traumatic wounds, and pressure ulcers from category 1 and category 2.

Figure 2 – Distribution of wounds by a) typology and gender, b) origin



Source: The authors

Predominant wounds were those which originated in the hospital and the frequency increases as the severity of the wound decreases (Figure 2b). There is significant relation between the level of severity of the wound and the place where it originated (χ_4^2 = 13,698, p = 0,010), as one would expect, there are more severe wounds originating at home and fewer with unknown origin. The date of wounds varies between 1 day and 30 years, and there was 1 in 4 wounds fewer with one month and half had at least 120 days (Table 3). The date of the wounds does not differ significantly with their severity (χ_4^2 = 3,635, p = 0,458).

Table 3 – Duration of the wound and carrying out treatment on the most severe wound.

Duration		**Feminine (N=73)**	**Masculine (N=65)**	**All (N=138)**
Of the wounds (days)	Average (IIQ)	195 (36-300)	84 (28-240)	120 (30-270)
	Range	1-2920	1-11027	1-11027
Carrying out treatment (minutes)	Average (IIQ)	13 (10-20)	15 (10-30)	15 (10-30)
	Range	2-60	2-75	2-75

IIQ = interquartile

Source: The authors

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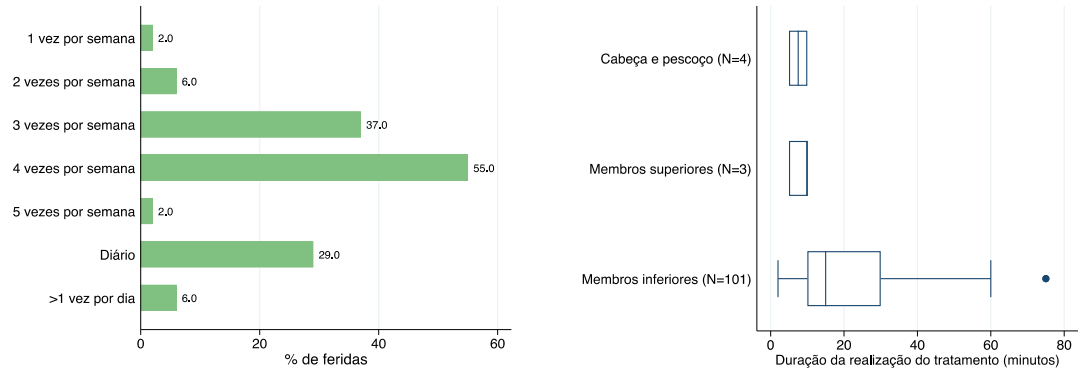
The most common procedure was the bandage being changed four times a week, followed by three times a week and daily (Figure 3a). The frequency of changing the bandage did not reveal being related to the localization of the wound (χ^2_4 = 1,634, p = 0,803) nor correlated to the duration of the wound (r_τ = 0,052, p = 0,433).

The duration of the carrying out of treatment on the most severe wound varies between 2 and 75 minutes (Chart 2) and there are patients with very old wounds that continue to change the bandage at least once a day. The time that it takes to change the bandage differs significantly with the location of the wound (χ^2_2 = 9,870, p = 0,007) (Figure 3b). The wounds located on the head and neck take significantly less time to carry out treatment than wounds located on trunk or inferior members (p<0,05).

Figure 3 - a) Frequency of change of bandage of most severe wound; b) Duration of carrying out treatment in function of its location.



a b

Source: The authors

DISCUSSION

The results obtained in the validation of the present instrument indicated satisfactory levels in the psychometric properties evaluated. Due to this, the tool can be safely used in clinical practice, with the recording of improvement in the manual for completion. The initial results of the application of the tool have data, until now non-existent about RNCCI. The type of wounds present, their duration and associated care, constitute important indicators of performance, allowing for the evaluation of effectiveness and quality of care (15,23).

The prevalence of wounds found is far superior to that which has been reported in other studies in similar environments and contexts (2,4,24). Nonetheless, the methodologies presented are varied and many countries do not present published data.

The majority of wounds found in this study are pressure ulcers category III and IV, which is very troublesome, considering that in the UCCI within and out of Europe, the

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majority of pressure ulcers are category I and II (4,25). This fact may be associated to the presence of higher co-morbidities in the Portuguese population (6,14) (26).

The discrepancies among observers in the classification and etiology of wounds found in this study, show the need to have more training on the classification of the UPP (27-29) (27). The instruction manual for filling out the tool should include pictures of wounds and respective classification to help the observer in making the decision. To increase reliability of the tool, it is suggested to apply the same assessment in different contexts of assistance.

In future applications of this tool, it is desirable that the direct observation of the patient be done by two observers. The reliability of the data can be quantified by a second surprise visit by a specialized nurse to one or two randomly selected units (30). As is apparent, this measure implies involving more specialized human resource.

Nonetheless, the direct observation of the patients' skin, through the application of this tool, is a more trustworthy evaluation than a retrospective recording of information based on clinical registers (31). Healthcare professionals are not always aware of the skin integrity of their patients and do not always register all wounds that are present.

The results of this study will help with decision-making at UCCI, namely the distribution of material and human resources and the implementation of a policy of change that will lead to a decrease in the prevalence of wounds, especially UPP (32). The resources, up to now, allocated to education, services and investigation in the area of wounds continue to be disproportionately low and deserve an urgent and strategic attention (33). The challenge in these three areas, education, services and investigation, is to recruit a multidisciplinary team motivated to work, in a cohesive way and in unison.

Limitations of the study

This tool does not contain information on the dimension of the wounds and material resources associated to their care, as well as if the identified wounds are infected. This type of information would allow for the study of the economic impact and estimated time of healing (34). The correlations were analyzed without considering possible confounders.

Implications for the advance of scientific knowledge for the area of health and nursing

There is an increasing interest in using international benchmarking in terms of quality of services provided at UCCI and this tool, built and validated for the Portuguese population, allows for the recognition of the dimension of the problem and follows international requisites. Pressure ulcers in UCCI are a good option for comparable international evaluations.

REVISTA ENFERMAGEM ATUAL IN DERME

CONCLUSION

This tool, now available, allows for the identification of the number and typology of wounds, characterization of severity, anatomical localization, services associated to its treatment and identification of antecedents regarding the patient.

Seeing as pressure ulcers, the main type of wounds identified in this study, a complex problem in the UCCI, its resolution is also through a complex intervention with professionals and organizational structures. The way the interventions are implemented are essential and the context of care is not just another variable, but an essential factor for success or change of behavior.

The lack of data on wounds, comparable in Europe and at an international level in UCCI, continues to limit an intelligent performance in decision making.

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