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TRANSLATION, ADAPTATION AND VALIDATION OF THE TORONTO SYMPTOM ASSESSMENT SYSTEM FOR WOUNDS (TSAS-W) TO PORTUGUESE

Tradução, adaptação e validação da Toronto Symptom Assessment System for Wounds (TSAS-W) para português

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ABSTRACT

Effective symptom management and patient comfort require a systematic assessment to better control symptoms. The Toronto Symptom Assessment System for Wounds (TSAS-W) is a tool designed to evaluate the complexity and specificity of wounds, focusing not on healing but on the effective control of symptoms. This study aims to translate, adapt and validate the TSAS-W for the Portuguese population and to analyze its feasibility.

This is a methodological study involving the cross-cultural adaptation of a quantitative, cross-sectional, observational, and descriptive tool. This resulted in an instrument formed of 10 items. Data collection was conducted in two oncology hospitals and within a Continuing Care Network, between October 2018 and May 2019 encompassing a sample of 90 Individuals with 94 chronic wounds.

The tool demonstrated good internal consistency, with a Cronbach's alpha coefficient of 0.827 in the first evaluation and 0.867 in the second evaluation. Observers confirmed the feasibility of the tool in a clinical setting.

This validation came to fill the lack of recording instruments for non-healing wounds, and emphasizes patient comfort.

KEYWORDS: Complex Wounds; Palliative Care; Comfort; Quality of Life; Validation Study.

RESUMO

Quando o foco não é a cicatrização, mas a gestão efetiva de sintomas e o conforto do doente, exige-se uma avaliação sistemática de sintomas. A Toronto Symptom Assessment System for Wounds (TSAS-W), é uma ferramenta que mede eficazmente os sintomas de feridas complexas. O objetivo deste estudo foi traduzir, adaptar e validar a TSAS-W para o contexto português, analisando a sua fiabilidade e aplicabilidade.

Foi um estudo metodológico de adaptação transcultural, de natureza quantitativa, transversal, observacional e descritivo. A versão final da escala contemplou 10 itens. A recolha de dados decorreu em duas Instituições Hospitalares Oncológicas e em uma Rede de Cuidados Continuados Integrados, entre outubro de 2018 e maio de 2019 com uma amostra de 90 doentes com 94 feridas crónicas.

A ferramenta revelou uma forte consistência interna com Coeficiente de alpha de Cronbach de 0,827 na 1ª avaliação e 0,867 na 2ª avaliação. Esta validação veio colmatar a ausência de instrumentos de registo para feridas não cicatrizáveis, objetivando a otimização de cuidados e conforto do doente.

PALAVRAS-CHAVE: Feridas complexas; Cuidados paliativos; Conforto; Qualidade de vida; Estudos de validação.

Introduction

Wound care involves several objectives: healing, symptom control (palliation), primary and secondary prevention, and complication prevention. Generally, achieving total healing is the main goal, though there are cases where this isn't feasible[1,2,3]. A non-healing wound is defined as one that lacks adequate blood supply to support the healing process or whose cause cannot be corrected[4,5]. In cases involving advanced age, incurable diseases, or end-of-life approaches, the potential for healing is minimal, and the goals shift. The palliative care goals of symptom control and psychosocial support can be applied to wound care for Individuals with non-healing wounds[6]. This category includes pressure ulcers (PU), malignant wounds (MW), traumatic and vascular wounds, among others[7,8].

Caring for Individuals with wounds starts with recognizing that they can lead to a range of symptoms and distress, affecting the quality of life for both Individuals and their families. To optimize symptom management, a structured assessment is essential for better control of issues like pain, odor, and exudate, ultimately improving patient comfort.

Clinical practice supports the assertion by some authors that instruments designed for assessing healable wounds are not suitable to the complexity and specificity of wounds where the goal is not healing but effective symptom control[9,10,11] .

In Portugal, there is a lack of a practical, validated assessment tool specifically tailored to wounds without healing potential that can evaluate the effectiveness of interventions in controlling symptoms. The Toronto Symptom Assessment System for Wounds (TSAS-W) scale[7] emerges as an instrument that addresses the key issues related to symptom management not only for MWs but also for other etiologies. It evaluates discomfort associated with wound symptoms (e.g., odor, bleeding) and psychosocial aspects (e.g., cosmetic concerns), enabling the measurement of variations in symptom control and the outcomes of nursing and other professional interventions.

Described by its authors as easy to use[7], the TSAS-W, when validated for the Portuguese population, could become a valuable tool in nursing care for individuals with palliative needs and those with complex wounds.

Conceptual framework

Pressure ulcers (PU) are highly prevalent among Individuals with advanced disease and are associated with increased morbidity and mortality, a reduced quality of life, and higher healthcare costs[7,12]. Common risk factors in these populations include immobility, decreased sensitivity, poor nutritional status, and mechanical forces of pressure and tension, which are often impossible to control leading to suffering and pain, where quality of life must prevail[13,14]. Therefore, PUs in persons with advanced disease and/or severely compromise health, , such as irreversible cachexia, are considered non-healing wounds. The focus of care shifts to managing wound symptoms, achieving outcomes align with the person's values and goals, and improving their quality of life[15].

Malignant wounds (MW) are a common occurrence in oncology, resulting from the infiltration of a tumour or metastases into the skin, affecting blood and lymphatic vessels, and can appear anywhere on the body. MWs typically indicate a poor prognosis, with unlikely healing unless antineoplastic treatments are effective. Otherwise, MWs will continue to grow, causing extensive damage to the skin and surrounding tissues[16,17]. One of the most prevalent challenges for Individuals with MWs is managing with physical symptoms such as pain, exudate, odor, itching, and bleeding[18,19,20,21]. MWs are complex wounds that often reach large volumes and dimensions, affecting extensive and exposed body areas, making them difficult to conceal with dressings. This, along with odor and excessive exudates, affects their management[22,23,24]. Research on the impact of MWs on Individuals is limited. Nevertheless, literature reviews highlight the intense and distressing psychological impact on Individuals and their families, including feelings of isolation, loss of sexual identity, fear, anxiety, and anguish. These emotions are directly related to difficulty in symptom control and the daily challenges of managing the wound and coping with an unpredictable body[18,25]. A study examining the effect of MW symptoms on Individuals' quality of life confirms that symptom burden is the primary factor contributing of reduce quality of life in individuals with MW[24,26,27]. The existence of a health professional trained to work on hope in controlling symptoms and preserving the dignity of the person can make a difference in their quality of life[28, 29]. This highlights the need for instruments that measure the discomfort levels experienced by Individuals with these wound symptoms. For MW evaluation, the literature references five scales: Wound Symptoms Self-Assessment Chart (WOSSAC); the TELER system; Schulz Malignant Wound Assessment Tool (SMWAT); Hopkins Wound Assessment Tool (HWAT); and the Toronto Symptom Assessment System for Wounds (TSAS-W)[16,30,31]. WOSSAC, HWAT, and SMWAT, though comprehensive, are extensive and impractical for daily use.

Several authors recommend using the TELER system as a complementary instrument for assessing the well-being, and quality of life of Individuals with wounds, as well as evaluating treatment interventions and their effectiveness[32,33]. The TELER system is a digital tool that is user-friendly, but it requires licensing and some financial investment, which may limit its accessibility despite its benefits[22]. In fact, the impact on clinical practice of these instruments, namely TELER and WOSSAC, has not yet been evaluated[19].The TSAS-W scale, developed in 2008 in Canada by Vincent Maida and collaborators, is designed for clinical and research use. Its creation is based on principles from the Edmonton Symptom Assessment System (ESAS), a validated tool for treating Individuals with advanced disease. The TSAS-W originated from a study observing 531 palliative care Individuals with 2,102 wounds across nine etiologies, primarily PUs, traumatic wounds, and MWs. These Individuals identified the most unmanageable symptoms associated with their wounds, leading to the development of the TSAS-W's ten parameters (appendix 1).

The TSAS-W was subsequently applied in a second pilot study involving 83 Individuals with 103 wounds (11 etiologies), using a numerical scale with 11 points (0-10) at two evaluation moments (1 and 7 days after) to assess discomfort from wound symptoms (e.g., odor, bleeding) and psychosocial aspects (e.g., cosmetic concerns)[7]. Currently, all versions of this scale are only available in English. Before selecting an assessment tool, nurses should select one that align with their work context and the skills and knowledge of the users[16,11,10]. Thus, the objectives of this study were to translate, adapt and validate the TSAS-W scale for the Portuguese context and analyses its feasibility.

Materials and Methods

The cultural and linguistic adaptation of the English version of the TSAS-W to Portuguese was conducted in two stages. The first stage involved translation, back--translation, and content validity assessment. The second stage focused on evaluating the psychometric properties. The internal consistency of the Portuguese version of the TSAS-W-PT was assessed using Cronbach's alpha, while construct validity was determined through exploratory factor analysis. The TAS-W-PT consists of 10 items assessing several parameters of wound symptoms, with scores ranging from 0 to 10 points, where 0 indicates the absence of symptoms and 10 represents the worst severe experience of the symptom . The assessment covers the last 24 hours, and can be completed by the patient, by the patient with the assistance of a health professional, or by a health professional when the patient is unable to do so (in this study referred to as an observer nurse). The instrument has two parts: the first for sociodemographic data, location, and classification of the wound, and the second for the symptom assessment scale. The total score is the sum of all items, reflecting the overall impact of the wound.

At the end of 2018, started the first stage of the study, the translation and back-translation were performed according to the protocol by Guillemin et al.[34], which involves five steps: initial translation, synthesis of the translation, back-translation, committee of judges, and pre-testing of the final version. With permission from the author of the original instrument, the translation was performed by two bilingual translators (English/ Portuguese).: one professional translator and the other was a professional with experience in caring for individuals with wounds. The researchers reconciled the translations to ensure consistency. During this stage, all items were reviewed and adapted to align the context of nursing care in Portugal.

Back-translation was performed by two professional bilingual translators who had no prior knowledge of the original instrument. The researchers reviewed the back--translations. Items 1, 2, 9, and 10 were modified. The final consensus version was sent to the original author for approval. To address potential conceptual perception issues and improve the clarity of the Portuguese version of the scale, an expert consensus input was considered and it is crucial for achieving cross-cultural equivalence[35,36].The opinion of 15 experts in clinical practice caring for individuals with wounds in both oncological and non-oncological contexts was soughted. These experts included specialist nurses from oncology centres, primary health care, and general hospitals, as well as oncologists, family medicine doctors, surgeons, and vascular surgeons.

Particular attention was given to the technical terms, as the assessment of symptoms is performed by the patient, and the scale can be completed in three ways: by the patient alone, with the assistance of a health professional, or by a health professional if the patient is unable to complete it. Content validity was evaluated by the previous panel of experts. To assess item comprehension, the instrument was tested on a sample of four randomly selected Individuals from the target population carriers

of the four main categories of wounds: MW, PU/I, iatrogenic and vascular.

All Individuals required explanations for items 1, 2, 8, and 9. Three mentioned difficulties understanding item 7, and one noted similarities between items 8 and 9. All participants stated they had no additional comments. All instruments were completed by the Individuals with the help of a nurse, taking an average of three minutes. The researchers reviewed the results and finalised the cognitive debriefing, deciding against modifying any items. This decision was based on the assumption that the target population for this scale comprises individuals in advanced stages of illness who are often debilitated and often require support from a health professional to assess their discomfort. Thus, the scale maintained simple yet scientifically accurate language.

The scale was reviewed by two English teachers to identify any spelling or grammatical errors, leading to the final version of the Toronto Scale for the Assessment of Wound Symptoms (TAS-W-PT) (Fig.1) and final scale on Table 1.

Table 1. Items from the Portuguese version of the Toronto Scale for the Assessment of Wound Symptoms (TAS-W-PT)

1. No pain in executing dressings and/or debridement	*0 1 2 3 4 5 6 7 8 9 10*	*Intense pain when executing the dressing and/or debridement*
2. No pain between dressing changes and/or debridement	*0 1 2 3 4 5 6 7 8 9 10*	*Intense pain between dressing changes and/or debridement*
3. No drainage or exudate	*0 1 2 3 4 5 6 7 8 9 10*	*Heavy and/or continuous drainage/exudate*
4. Odorless	*0 1 2 3 4 5 6 7 8 9 10*	*Intense Odor*
5. No Itching	*0 1 2 3 4 5 6 7 8 9 10*	*Intense itching*
6. No Bleeding	*0 1 2 3 4 5 6 7 8 9 10*	*Heavy and/or continuous bleeding*
7. No aesthetic concern	*0 1 2 3 4 5 6 7 8 9 10*	*Intense aesthetic concerns*
8. No edema and/or tumefaction around the wound	*0 1 2 3 4 5 6 7 8 9 10*	*Intense edema and/or tumefaction around the wound*
9. No volume or mass effect caused by the wound	*0 1 2 3 4 5 6 7 8 9 10*	*Intense volume or mass effect caused by the wound*
10. No volume or mass effect caused by the dressing	*0 1 2 3 4 5 6 7 8 9 10*	*Intense volume or pressure effect caused by the dressing*

Following this assessment, a pre-test of the Portuguese version of the TAS-W-PT was conducted with a convenience sample of ten Individuals from a wound consultation at a national health institution. Participants, caregivers, and healthcare professionals were invited to complete the instrument and provide feedback on their understanding of it. In addition, the time taken by each participant to complete the scale was recorded, averaging four minutes. No difficulties were reported in completing the instrument.

In the second stage of the study, an observational study was conducted involving a non-probabilistic accidental sample of 90 Individuals with 94 chronic wounds, in health units in Lisbon, Coimbra, and Alentejo between October 2018 and May 2019. Although data were initially collected from more than 106 patients, logistical and resource constraints led to a final sample size of 90 individuals. However, this sample remains robust and comparable to previous studies, allowing for a meaningful analysis of chronic wound management and outcomes. Following the TSAS-W pilot trial model, , where 103 sequential wounds from 83 patients were assessed. At that time TSAS-W scores were assessed for each wound at referral and 1 week later: 78.6% of the assessments were completed by the patient alone, 14.6% with assistance from a caregiver, and 6.8% were completed entirely by a caregiver, we adopted a similar approach.

The inclusion criteria were: being over 18 years old; having wounds with no healing potential or clinical information indicating an average life expectancy of less than 6 months; and being an outpatient, inpatient, or at home.

To analyse the feasibility of applying the TSAS-W--PT scale and to gauge its acceptance, observer nurses were asked to complete an opinion questionnaire about their experience using the scale. This questionnaire had five questions addressing aspects such as daily practicality, usefulness, difficulties experienced in completing or guiding the patient, and the patient's difficulty with the scale. Responses were recorded on a 5-point Likert-type scale. Data collection started after obtaining approval from the Ethics Committees of the respective health units. Participants were informed of the nature and methods of the study and provided written consent as evidence of their volunteer and informed participation. Anonymity and confidentiality were assured, in accordance with the principles of the Declaration of Helsinki.

Each observing nurse was provided with the Data Collection Procedure Manual. Data collection was conducted in two stages: at the first contact with the patient and 7 days later. The sample size was determined based on the initial instrument validation study, considering a sample of ninety participants[7]. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) program - version 26.0 for Windows. Descriptive analysis included frequencies of categorical variables and measures of central tendency and dispersion of continuous variables. The analysis included absolute and relative frequency central tendency and dispersion or variability measures, and Pearson correlations to assess item homogeneity and standardized Cronbach's alpha. The scale's sensitivity was measured using Spearman's correlation to analyse the relationships between variables. The significance level of 5% was adopted for a 95% Confident Interval (CI). Construct validity was performed through factor analysis with orthogonal rotation using the Varimax method.

Figure 1. Toronto Symptom Assessment System for Wounds (TSAS-W-

Escala de Toronto para Avaliação de Sintomas em Feridas (TSAS-W-PT)

Número de Identificação do estudo:_____ Idade: _____ Género: M ☐ F ☐

Número de Identificação da ferida: _____ Data: ____ ____ _____ Hora:_____

Número da avaliação da ferida: _____ ___ _

Localização da Ferida:	1. Face/Cabeça/Pescoço	5. Membro Superior	9. Períneo / Região Genital
	2. Tórax Anterior / Mama	6. Membro Inferior	10. Região sagrada
	3. Abdómen /Flanco	7. Região pélvica	11. Pé (excluindo calcanhar)
	4. Região lombar/dorsal	8. Anca	12. Calcanhar

Lado:	1. Esquerdo	2. Direito	3. Centro	4. Descreva a localização se necessário:

Classificação da ferida segundo a Etiologia	1. Maligna	4. Úlcera do pé diabético	7. Iatrogénica
	2. Úlcera por pressão	5. Úlcera venosa	8. Infecciosa/inflamatória
	3. Ferida traumática	6. Úlcera arterial	9. Ostomia
Grau/Categoria:_____	Tamanho/Área: _____(cm²)	Não mensurável ☐	10. Outro

*Assinale com um círculo, o número que melhor descreve os sintomas relacionados com a sua ferida nas últimas 24 horas:

Sem dor na execução do pensos e/ou no desbridamento	0 1 2 3 4 5 6 7 8 9 10	Dor intensa na realização do penso e/ou no desbridamento
Sem dor entre mudança de pensos e/ou desbridamento	0 1 2 3 4 5 6 7 8 9 10	Dor intensa entre mudança de pensos e/ou desbridamento
Sem drenagem ou exsudado	0 1 2 3 4 5 6 7 8 9 10	Drenagem/ exsudado intenso(a) e/ou contínuo
Sem Odor	0 1 2 3 4 5 6 7 8 9 10	Odor intenso
Sem Prurido	0 1 2 3 4 5 6 7 8 9 10	Prurido intenso
Sem Hemorragia	0 1 2 3 4 5 6 7 8 9 10	Hemorragia intensa e/ou contínua
Sem preocupação estética	0 1 2 3 4 5 6 7 8 9 10	Preocupação estética intensas
Sem edema e/ou tumefação em redor da ferida	0 1 2 3 4 5 6 7 8 9 10	Edema e/ou tumefação intensos em redor da ferida
Sem volume ou efeito massa causados pela ferida	0 1 2 3 4 5 6 7 8 9 10	Volume ou efeito massa intensos causados pela ferida
Sem volume ou efeito massa causados pelo penso	0 1 2 3 4 5 6 7 8 9 10	Efeito volume ou pressão intensos causados pelo penso
Preenchido pelo: 1. Doente	2. Doente apoiado pelo prestador de cuidados	3.Prestador de cuidados

@Dr. VincentMaida2008; em validaçãopara Portugal por Vicente,H.; Franco,D.; Furtado, K.; Deodato,S.; Carvalho, T.; Nunes, E.; Alves, P

Results

Data was gathered from 188 assessments of individuals with wounds, covering observations at two different time points for 94 wounds in 90 participants. The sample comprised 54.4% females and 45.6% males, with ages ranging from 29 to 93 years and an average age of 67 years. The majority of wounds were located on the face, head, and neck (20%), followed by the anterior chest or breast (14.4%), lower limbs, sacral region, and foot (excluding the heel) (13.3%). Most of the wounds were malignant (60.1%), followed by pressure ulcers (26.7%), with 68.2% of them falling under category 4. The average size of most wounds was 6 cm^2 (55.6%), and 44.4% were non-measurable.

The registration was primarily conducted by nurse observers and, in both assessments, by Individuals with the support of nurse observers (84%). Feedback from the 12 wound specialist nurse observers, experienced in palliative care Individuals and wound treatment, indicated that the scale is practical for daily use and helpful, with no difficulty in completion and patient guidance. However, some challenges were noted in individuals understanding of the ninth and tenth items. The observers unanimously agreed that no additional items were required.

The metric characteristics of the Portuguese version of the Toronto Scale for the Assessment of Wound Symptoms (TAS-W-PT) were evaluated for construct validity and reliability. The internal consistency study utilized Cronbach's alpha coefficient (α), as proposed by Pestana and Gageiro[37]. The value was 0.8 and 0.9 in the first and second assessments, respectively (Table 2), which are considered strong values according to Streiner and Norman[38]. Corrected correlations of each item with the scale total ranged from 0.333 to 0.719 in the first assessment and from 0.439 to 0.715 in the second assessment, indicating a range of low to high correlations, with all items deemed appropriate according to Streiner and Norman[38] (Table 2).

Table 2. Item homogeneity statistics and Cronbach's alpha coefficient of the TSAS-W-PT scale

1ST EVALUATION ITEMS	R TOTAL WITHOUT THE ITEM	α WITHOUT THE ITEM
1. Pain when executing dressings and/or during debridement	0,347	0,829
2. Pain between dressing changes and/or debridement	0,386	0,824
3. Drainage or exudate	0,719	0,789
4. Odor	0,565	0,805
5. Itching	0,421	0,819
6. Bleeding	0,333	0,826
7. Aesthetic concern	0,433	0,819
8. Edema and/or tumefaction around the wound	0,658	0,795
9. Volume or mass effect caused by the wound	0,624	0,799
10. Volume or mass effect caused by the dressing	0,649	0,797
2ND EVALUATION ITEMS	**R TOTAL WITHOUT THE ITEM**	**α WITHOUT THE ITEM**
1. Pain when executing dressings and/or during debridement	0,460	0,865
2. Pain between dressing changes and/or debridement	0,584	0,854
3. Drainage or exudate	0,715	0,842
4. Odor	0,711	0,843
5. Itching	0,559	0,856
6. Bleeding	0,439	0,864
7. Aesthetic concern	0,402	0,869
8. Edema and/or tumefaction around the wound	0,710	0,843
9. Volume or mass effect caused by the wound	0,669	0,846
10. Volume or mass effect caused by the dressing	0,589	0,854

In our pursuit of construct validity, we executed factor analysis and employed the Varimax method with orthogonal rotation to optimize item saturation. We specifically opted for a principal components factor structure.

Our assessments yielded a Kaiser-Meyer-Olkin (KMO) test score of 0.802, signifying the adequacy of our sample, and a statistically significant Bartlett's sphericity test ($p<0.001$). The correlation coefficients between the scale items exceeded 0.30, indicating the appropriateness of the factor analysis.

Furthermore, when we examined the commonality coefficient values presented in Table 3, we gained insight into the covariance of each item with the isolated factors, shedding light on the extent to which each item is associated with the isolated factors[39].

Our analysis revealed that most items were clustered together in a single factor, with the exception of items 1, 2, and 6.

Table 3. Values of the coefficient of commonalities of the TSAS-W-PT scale

1ST EVALUATION ITEMS	MAIN FACTORS	COMMONALITIES
1. Pain when executing dressings and/or during debridement	0,416	0,775
2. Pain between dressing changes and/or debridement	0,449	0,851
3. Drainage or exudate	0,804	0,733
4. Odor	0,687	0,659
5. Itching	0,536	0,479
6. Bleeding	0,441	0,632
7. Aesthetic concern	0,578	0,618
8. Edema and/or tumefaction around the wound	0,755	0,734
9. Volume or mass effect caused by the wound	0,759	0,697
10. Volume or mass effect caused by the dressing	0,768	0,629

The analysis of Pearson correlations between all items and the total scale was also performed to assess the strength of association between two variables, and to assess whether there are relationships between the instrument's measured variables and the scale's total score. The results, as presented in Table 4, show that the correlations at the beginning of the study are moderate to strong. It is also observed that the items "bleeding," "pain when applying the dressing," and "pain between dressing changes and/or debridement" have lower correlation values, although they are statistically significant with significance level of $p<0.001$.

Table 4. Pearson's correlation coefficients between the scale items and the total

TSAS-W SCALE PARAMETERS	MEAN TSAS - BASELINE	MEAN TSAS 1 WEEK
Pain in the execution of the dressings	0,495**	0,575**
Pain between dressing changes and/or debridement	0,519**	0,680**
Drainage or exudate	0,792**	0,817**
Odor	0,669**	0,797**
Itching	0,535**	0,646**
Bleeding	0,431**	0,529**
Aesthetic Concern	0,563**	0,539**
Edema and/or tumefaction	0,748**	0,781**
Volume or mass effect	0,728**	0,755**
Volume or mass effect caused by the dressing	0,734**	0,666**

It was also verified that the coefficients for the items "bleeding," "pain when applying the dressing," and "pain between dressing changes and/or debridement" tend to increase gradually across the two evaluation moments. All Person correlation tests presented a significant level of $p<0.005$, indicating that there is a probability of less than a 0.5% probability that the results are due to chance. This confirms a high a level of statistical significance[37]

The means of TSAS-W-PT varied across different etiologies of wounds (Table 5), with traumatic wounds presenting the highest mean of 33.25, followed by malignant wounds with a mean score of 29.81.

Table 5. Means of TSAS-W-PT by wound etiology

WOUND CLASSIFICATION (N=94)	TSAS-W MEAN	MEAN TSAS - BASELINE	MEAN TSAS – 1 WEEK
Malignant Wound (N=58)	29,81 (SD 22,23)	32,10 (SD 21,87)	27,52 (SD 2,54)
Pressure Ulcer (N=25)	25,62 (SD 18,45)	26,88 (SD 18,54)	24,36 (SD 18,65)
Traumatic Wound (N=2)	33,25 (SD 14,72)	33,5 (SD 17,67)	33 (SD 18,38)
Venous Ulcers (N=2)	4,25 (SD 4,5)	6,5 (SD 6,36)	2 (SD 0,00)
Arterial Ulcers (N=2)	18 (SD 1,41)	17,5 (SD 0,70)	18,5 (SD 2,12)
Iatrogenic wounds (N=3)	15,33 (SD 9,47)	17 (SD 10,53)	13,66 (SD 10,26)
Infectious/inflammatory (N=2)	16,75 (SD 10,68)	25,5 (SD 2,12)	8 (SD 5,65)

It was found that the etiology that, on average, reduced the score the most was the infectious/inflammatory wound. In the first evaluation, it had an average score of 25.5, which decreased to 8 in the second evaluation. Arterial ulcer was the only etiology that showed an increase from the first to the second evaluation, with an initial score of 17 that rose to 18.5 in the second evaluation.

Regarding the means of each variable, pain was one of the parameters with the highest mean values (Table 6).

Table 6. Mean Values of the TSAS-W-PT Parameters

TSAS-W SCALE PARAMETERS	MEAN TSAS-W	MEAN TSAS - BASELINE	MEAN TSAS – 1 WEEK
Pain in the execution of the dressings	3,29	3,41	3,16
Pain between dressing changes and/or debridement	3,32	3,45	3,19
Drainage or exudate	3,73	4,14	3,33
Odor	2,34	2,60	2,07
Itching	1,89	1,99	1,80
Bleeding	1,49	1,67	1,31
Aesthetic Concern	2,44	2,57	2,31
Edema and/or tumefaction	2,95	3,28	2,62
Volume or mass effect	3,16	3,32	3,01
Volume or mass effect caused by the dressing	2,62	2,84	2,40

Discussion

The translation and validation of the Toronto Symptom Assessment System for Wounds (TSAS-W) into Portuguese demonstrate its relevance and applicability in the Portuguese healthcare context, particularly for patients with chronic and non-healing wounds. This study's results align with previous findings that emphasize the importance of effective symptom management for improving patient comfort and quality of life, especially in palliative care settings where wound healing is not the primary focus.

Chronic wounds, especially malignant and pressure ulcers, can severely impact a patient's physical and emotional well-being. Studies have shown that pain, exudate, odor, and bleeding are among the most distressing symptoms associated with chronic wounds, significantly affecting a patient's quality of life[1,2]. The TSAS-W provides a comprehensive assessment of these symptoms, enabling healthcare providers to monitor changes and implement timely interventions that target symptom relief rather than healing, which is often unachievable in these cases[3].

The high internal consistency values (Cronbach's alpha 0.827 and 0.867) observed in the TSAS-W-PT validation suggest that the instrument is reliable for assessing wound-related symptoms in patients with non-healing wounds. These values are consistent with the original validation of the TSAS-W scale conducted by Maida[7], where similar strong reliability and sensitivity to changes in symptomatology were reported[4,5]. The high item-total correlation across multiple evaluations further supports the scale's robustness in capturing symptom severity.

An important aspect of wound management in palliative care is the focus on reducing symptom burden to enhance quality of life. As evidenced in this study, the TSAS-W-PT scale is practical and feasible for daily clinical use, with most nurse observers finding it easy to administer and relevant to patient care[6]. This finding echoes those of other studies that underscore the necessity of simple yet effective tools for symptom assessment in palliative care[7,8]. The use of this tool in Portuguese clinical settings can help standardize symptom assessment, leading to more consistent care practices and improved outcomes for patients with chronic wounds.

Despite the scale's practicality, some challenges were noted regarding patients' understanding of certain items, particularly those related to the ninth and tenth aspects, which focus on volume or mass effects caused by the wound or dressing. This issue highlights the need for further refinement and patient education to ensure accurate self-assessment or assisted assessment by healthcare providers. Similar challenges have been documented in the use of other wound assessment tools, such as the TELER system and WOSSAC, which also require patient input for effective symptom evaluation[9,10].

The TSAS-W-PT's ability to capture both physical and psychosocial symptoms, such as aesthetic concerns, provides a more holistic view of the patient's experience. Research has shown that wounds, especially malignant ones, can have profound psychological effects on patients, contributing to feelings of isolation, loss of self-esteem, and social withdrawal[11]. By incorporating parameters related to cosmetic concerns and the emotional impact of wounds, the TSAS-W-PT offers a more comprehensive approach to wound symptom management in palliative care.

Limitations

This study has a few limitations that should be considered when interpreting the results. Firstly, the sample size, although adequate for validation purposes, was relatively small. This might limit the generalizability of the findings. Larger studies conducted across different healthcare settings are necessary to confirm the broader applicability and reliability of the scale.

Secondly, the absence of longitudinal data prevents us from assessing the stability of TSAS-W-PT over time. This is crucial for evaluating chronic wounds where symptoms may change over time. It would be beneficial to conduct a test-retest reliability assessment in future studies to determine how consistent the scale remains when used repeatedly over extended periods.

Finally, although this study showed good internal consistency, further cross-cultural validation is needed to ensure the scale's usefulness in different linguistic and cultural contexts. The version used in this study was only adapted and validated for Portuguese-speaking patients in specific settings[12,13.]

Scientific Justification and Future Research

This research addresses an important need in the Portuguese healthcare system by introducing a validated tool for assessing symptoms in non-healing wounds. However, further research is necessary to assess the long-term effectiveness of the TSAS-W-PT in various clinical settings, such as elderly care facilities and home care environments. Additionally, conducting longitudinal studies to evaluate the scale's consistency and sensitivity over extended periods would offer valuable insights into its reliability for monitoring chronic wound progression.

Incorporating tools like the TSAS-W-PT into regular clinical practice is expected to improve patient-centered care by enabling healthcare professionals to customize interventions based on individual symptom severity and patient-reported outcomes. As palliative care focuses not only on symptom management but also on preserving patient dignity and enhancing quality of life, the TSAS-W--PT provides a valuable resource for achieving these goals in a structured and measurable manner.[12,13.]

Conclusions

The Toronto Symptom Assessment System for Wounds was successfully adapted and validated for the Portuguese population, demonstrating robust psychometric properties.

The clinical application of the TSAS-W-PT showed strong internal consistency, with Cronbach's alpha values of 0.829 and 0.869 in the initial and follow-up evaluations, respectively. These results affirm that the scale effectively meets its intended objectives and addresses the needs of healthcare professionals in managing wound symptoms.

The simplicity and brevity of this instrument make it a valuable tool for both clinical and research applications within Portugal. Its ease of use and straightforward design facilitate the integration of the TSAS-W-PT into routine clinical practice and research protocols.

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Aprovação pela Comissão de Ética

Data collection began after obtaining the positive opinion of the Ethics Committees of the health units with records nº 185/2018 – UIC/1218 and nº 34/2018/CES of both institutions in question.

Conflito de Interesses

The authors declare no conflict of interest.

APPENDIX 1 - Toronto Symptom Assessment System for Wounds (TSAS-W)

Toronto Symptom Assessment System for Wounds (TSAS-W)

Patient's Name: _____ **Date:** ___ ___ _____ **Time:** _____
dd mm yyyy

Study ID: _____ **Wound ID:** _____ **Wound assessment number:** _____

Wound Location:

1□ **Face/Head/Neck**
2□ **Chest/Breast**
3□ **Abdomen/Flank**
4□ **Upper/Lower Back**
5□ **Upper Extremity**
6□ **Lower Extremity**
7□ **Pelvis/Hips**
8□ **Perineum/Genitalia**
9□ **Sacrum/Coccyx**
10□ **Foot (excluding heel)**
11□ **Heel**

Side: 1☐**Left** 2☐**Right** 3☐**Center** Describe location further if needed: _____

Wound Class:

1□ **Malignant**
2□ **Pressure Ulcer**
3□ **Traumatic**
4□ **Diabetic Foot ulcer**
5□ **Venous ulcer**
6□ **Arterial ulcer**
7□ **Iatrogenic**
8□ **Infection/Inflammatory**
9□ **Ostomy**
10□ **Other**

Stage: _____ Size: _____ (cm^2)

Please circle the number that best describes your **wound-related symptoms over the past 24 hours:*

No Pain **with** dressings and/or debridement	0 1 2 3 4 5 6 7 8 9 10	Most severe Pain **with** dressings and/or debridement
No Pain **between** dressings and/or debridement	0 1 2 3 4 5 6 7 8 9 10	Most severe Pain **between** dressings and/or debridement
No Drainage or Exudation	0 1 2 3 4 5 6 7 8 9 10	Most severe and/or continuous Drainage or Exudation
No Odor	0 1 2 3 4 5 6 7 8 9 10	Most severe Odor
No Itching	0 1 2 3 4 5 6 7 8 9 10	Most severe Itching
No Bleeding	0 1 2 3 4 5 6 7 8 9 10	Most severe and/or continuous Bleeding
No Cosmetic or Aesthetic concern and/or distress	0 1 2 3 4 5 6 7 8 9 10	Most severe Cosmetic or Aesthetic concern and/or distress
No Swelling or Edema **around** wound	0 1 2 3 4 5 6 7 8 9 10	Most severe Swelling or Edema **around** wound
No Bulk or Mass effect from **wound**	0 1 2 3 4 5 6 7 8 9 10	Most severe Bulk or Mass effect from **wound**
No Bulk or Mass effect from **dressings**	0 1 2 3 4 5 6 7 8 9 10	Most severe Bulk or Mass effect from **dressings**

Completed by: 1☐**Patient** 2☐**Patient assisted by caregiver** 3☐**Caregiver**