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CASE REPORT

Role of Bates-Jenson Wound Assessment Tool (BJWAT) in Wound Management

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ABSTRACT

Background: Accurate wound assessment is essential to effective wound management. Systematic evaluation of wound characteristics enables clinicians to monitor tissue changes, assess healing progression and make informed treatment decisions. Standardised assessment instruments can improve consistency in clinical evaluation and documentation.

Aim: This article describes the clinical application of the Bates-Jensen Wound Assessment Tool (BJWAT) to monitor wound status and guide treatment decisions.

Methods: BJWAT was used for serial wound assessment in a 32-year-old female patient with a buttock wound managed at a tertiary care centre. We evaluated wound characteristics using the standardised scoring system and repeated assessments during the treatment period. We also sought feedback from plastic surgery trainees on the assessment tool's practical usefulness.

Results: Serial wound assessments demonstrated a progressive reduction in BJWAT scores from 52 at the initial assessment to 32 during the treatment period. The scoring system provided a structured approach to documenting wound characteristics and helped clinicians monitor wound progression and plan further interventions. However, the clinical team recognised the importance of considering systemic factors that may influence wound healing.

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Conclusion: BJWAT provides a systematic approach to wound assessment and documentation. Its application alongside evaluation of patient-related systemic factors may support more comprehensive clinical decision-making in wound management.

KEYWORDS:

• Bates-Jensen Wound Assessment Tool • BJWAT • Wound Assessment • Wound Management • Wound Healing • Nursing Care

INTRODUCTION

Wound healing is a complex biological process involving a coordinated sequence of cellular and molecular events that restore tissue integrity following injury. The process progresses through overlapping phases of haemostasis, inflammation, proliferation and remodelling. Several factors influence its outcome, including the extent of tissue damage, local wound conditions, and the patient's overall physiological status. Therefore, systematic wound assessment is essential to effective wound management.

A comprehensive wound evaluation involves examining wound dimensions, depth, wound-bed characteristics, exudate, surrounding skin, and evidence of tissue deterioration or infection. Clinical assessment also requires appropriate judgement and experience to interpret these findings and determine the most suitable treatment approach. Doughty emphasised the importance of a practical approach to wound assessment, while Harris and colleagues highlighted the clinical skills required for accurate evaluation and documentation.[1,2]

Inconsistent assessment and documentation may affect the continuity and quality of wound care. Standardised assessment instruments provide a structured method for recording wound characteristics and monitoring changes over time. These approaches can facilitate communication among healthcare professionals, help evaluate treatment responses, and support clinical decision-making.[3,4] Wound-bed preparation, including appropriate debridement and maintenance of tissue balance, is another important consideration in achieving favourable healing outcomes.[5]

Several standardised instruments are available for wound evaluation, including the Pressure Ulcer Scale for Healing (PUSH), Bates-Jensen Wound Assessment Tool (BJWAT), DESIGN, DESIGN-R and Diabetic Foot Ulcer Assessment Scale (DFUAS). These instruments assess different wound characteristics and provide a systematic framework for monitoring wound progression. The choice of assessment instrument depends on the wound type, clinical setting and purpose of evaluation.

The Bates-Jensen Wound Assessment Tool is a structured instrument that evaluates 13 wound characteristics using a five-point numerical scoring system. The parameters include wound size, depth, edges, undermining, necrotic tissue, exudate, surrounding skin colour, peripheral oedema, induration, granulation tissue and epithelialisation. Each characteristic is graded by severity, producing a total score ranging from 13 to 65. A lower score represents a more favourable wound status, whereas a higher score indicates greater tissue deterioration. Studies have examined the validity and reliability of this instrument in clinical wound assessment.[6,7]

Although BJWAT was initially developed for pressure-related wounds, its structured assessment approach may also be useful in monitoring wounds of other aetiologies. However, wound-specific scoring alone may not provide a complete picture of the healing process, as systemic conditions and patient-related factors can influence clinical outcomes.

In this article, we describe our experience with the application of BJWAT in the serial assessment of a buttock wound in a 32-year-old female patient. We also discuss its practical usefulness in monitoring wound progression, supporting treatment decisions and identifying areas where additional patient-related factors could be incorporated into a comprehensive wound assessment approach.

MATERIALS AND METHODS

This clinical observation was carried out in the Department of Plastic Surgery at a tertiary care centre. The clinical application of the Bates-Jensen Wound Assessment Tool (BJWAT) was evaluated in a 32-year-old female patient presenting with a wound over the buttock. The patient provided informed consent before inclusion in the clinical assessment.

The wound was evaluated using the BJWAT assessment chart at initial presentation and then weekly for four weeks. The assessment documented changes in wound characteristics and monitored the treatment response.

The BJWAT scoring system was applied to assess the wound using its 13 standardised parameters. Each parameter was assigned a numerical score according to the observed wound characteristics. The cumulative score documented the overall wound status at each assessment.

Serial assessments were conducted alongside wound debridement and wound-bed preparation, as clinically indicated. Plastic surgery trainees involved in the patient's management used the assessment tool. Clinical photographs were obtained at different stages of treatment to document changes in wound appearance and correlate them with the corresponding BJWAT scores.

At the end of the observation period, the study collected feedback from participating plastic surgery trainees using a structured questionnaire. The questionnaire explored the ease of using the assessment instrument, its usefulness in evaluating wound status, its contribution to treatment planning and the perceived need for modifications to the existing scoring system.

Bates-Jensen Wound Assessment Tool

Complete the rating sheet to assess wound status. Evaluate each item by picking the response that best describes the wound and entering the score in the item score column for the appropriate date.

Location: Anatomic site. Circle, identify right **(R)** or left **(L)** and use **"X"** to mark the site on body diagrams:

- Sacrum & coccyx - Lateral ankle
- Trochanter - Medial ankle
- Ischial tuberosity - Heel - Another site

Shape: Overall wound pattern; assess by observing perimeter and depth.

Circle and date appropriate description:

- Irregular/ Linear or elongated
- Round/oval Bowl/boat
- Square/rectangle-Butterfly-Other Shape

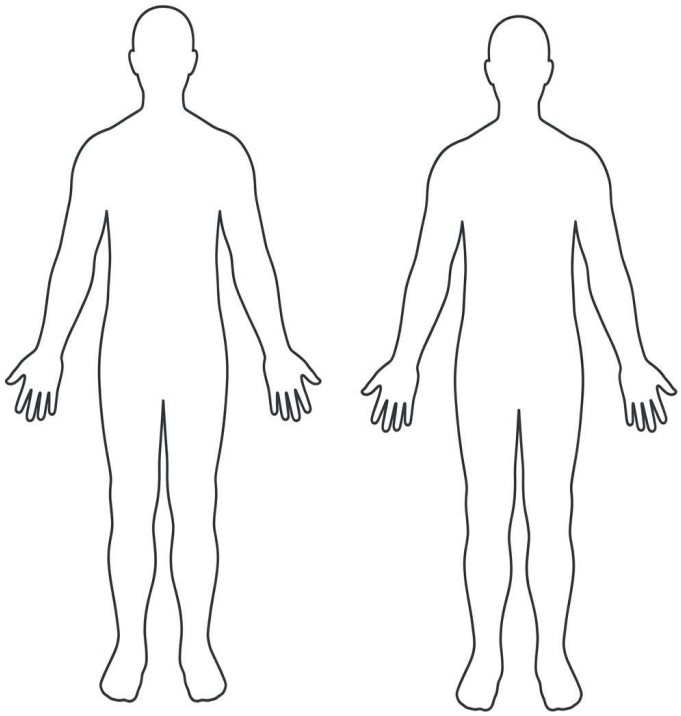
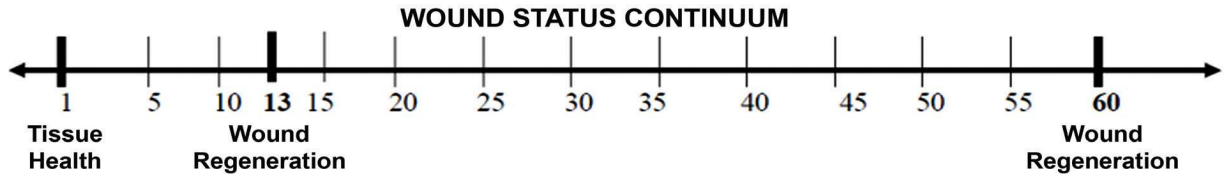


Table 1: Bates-Jenson Wound Assessment Tool

Item	Assessment	Date Score	Date Score	Date Score
1. Size	1 = Length x width < 4 sq cm 2 = Length x width 4 - < 16 sq cm 3 = Length x width 16.1 - < 36 sq cm 4 = Length x width 36.1 - < 80 sq cm 5 = Length x width > 80 sq cm			
2. Depth	1 = Non-blanchable erythema on intact skin 2 = Partial thickness skin loss involving epidermis &/or dermis 3 = Full thickness skin loss involving damage or necrosis of subcutaneous tissue; may extend down to but not through underlying fascia; &/or mixed partial & full thickness &/or tissue layers obscured by granulation tissue 4 = Obscured by necrosis 5 = Full thickness skin loss with extensive destruction, tissue necrosis or damage to muscle, bone or supporting structures			
3. Edges	1 = Indistinct, diffuse, none clearly visible 2 = Distinct, outline clearly visible, attached, even with wound base 3 = Well-defined, not attached to wound base 4 = Well-defined, not attached to base, rolled under, thickened 5 = Well-defined, fibrotic, scarred or hyperkeratotic			
4. Undermining	1 = None present 2 = Undermining < 2 cm in any area 3 = Undermining 2-4 cm involving < 50% wound margins 4 = Undermining 2-4 cm involving > 50% wound margins 5 = Undermining > 4 cm or Tunneling in any area			
5. Necrotic Tissue Type	1 = None visible 2 = White/grey non-viable tissue &/or non-adherent yellow slough 3 = Loosely adherent yellow slough 4 = Adherent, soft, black eschar 5 = Firmly adherent, hard, black eschar			
6. Necrotic Tissue Amount	1 = None visible 2 = < 25% of wound bed covered 3 = 25% to 50% of wound covered 4 = > 50% and < 75% of wound covered 5 = 75% to 100% of wound covered			
7. Exudate Type	1 = None 2 = Bloody 3 = Serosanguineous: thin, watery, pale red/pink 4 = Serous: thin, watery, clear 5 = Purulent: thin or thick, opaque, tan/yellow, with or without odor			
8. Exudate Amount	1 = None, dry wound 2 = Scant, wound moist but no observable exudate 3 = Small 4 = Moderate 5 = Large			

table cont....

Item	Assessment	Date Score	Date Score	Date Score
9. Skin Color Surrounding Wound	1 = Pink or normal for ethnic group 2 = Bright red &/or blanches to touch 3 = White or grey pallor or hypopigmented 4 = Dark red or purple &/or non-blanchable 5 = Black or hyperpigmented			
10. Peripheral Tissue Edema	1 = No swelling or edema 2 = Non-pitting edema extends < 4 cm around wound 3 = Non-pitting edema extends ≥ 4 cm around wound 4 = Pitting edema extends < 4 cm around wound 5 = Crepitus and/or pitting edema extends ≥ 4 cm around wound			
11. Peripheral Tissue Induration	1 = None present 2 = Induration, < 2 cm around wound 3 = Induration 2-4 cm extending < 50% around wound 4 = Induration 2-4 cm extending ≥ 50% around wound 5 = Induration > 4 cm in any area around wound			
12. Granulation Tissue	1 = Skin intact or partial thickness wound 2 = Bright, beefy red; 75% to 100% of wound filled &/or tissue overgrowth 3 = Bright, beefy red; < 75% & > 25% of wound filled 4 = Pink, &/or dull, dusky red &/or fills ≤ 25% of wound 5 = No granulation tissue present			
13. Epithelialization	1 = 100% wound covered, surface intact 2 = 75% to < 100% wound covered &/or epithelial tissue extends > 0.5cm into wound bed 3 = 50% to < 75% wound covered &/or epithelial tissue extends to < 0.5cm into wound bed 4 = 25% to < 50% wound covered 5 = < 25% wound covered			
	Total Score			
	Signature			



Plot the total score on the Wound Status Continuum by putting an "X" on the line and the date beneath the line. Plot multiple score with their dates to see-at-a-glance regeneration or degeneration of the wound.

RESULTS

The BJWAT was used to assess the traumatic wound over the buttock in a 32-year-old female patient during the treatment period. The initial assessment recorded a total score of **52,** indicating a wound requiring ongoing clinical management.

On serial assessment, the score decreased to **46 after two weeks**, followed by **36 in the third week** and **32 in the fourth week**. These findings showed a progressive reduction in the total BJWAT score during treatment, including wound care and regenerative therapy.

The serial scores provided a structured record of changes in wound status over time. Clinical photographs taken at different stages of treatment complemented the numerical assessments and helped document the wound's progress.

We also collected feedback from the participating plastic surgery trainees using a structured questionnaire to assess the practical

usefulness of the BJWAT in wound evaluation and treatment planning.

Table 2: BJWAT Scores

Week 1	Week 2	Week 3	Week 4
52	46	36	32



Figure 1: Wound with BJWAT Score 52 at admission (left buttock)

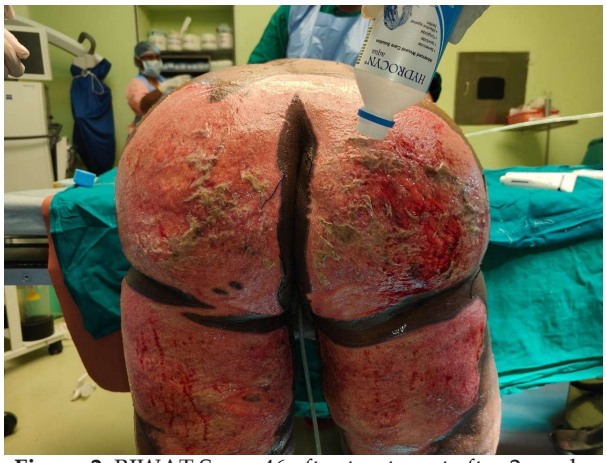


Figure 2: BJWAT Score 46 after treatment after 2 weeks



Figure 3: BJWAT Score 36 after treatment with regenerative therapy (week 3)

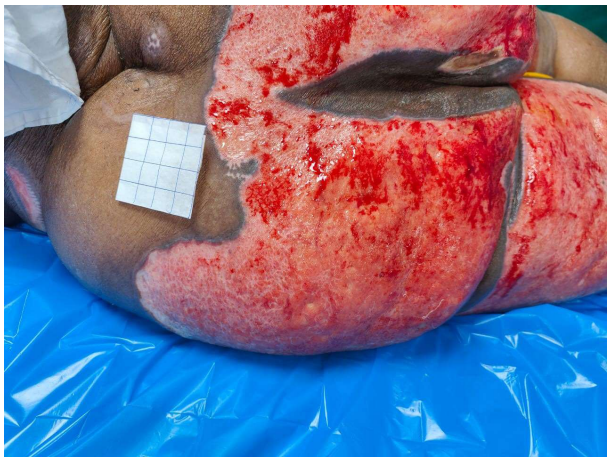


Figure 4: BJWAT Score 32 after treatment with regenerative therapy

Table 3: Questionnaire

Questions	Participants				
	1	2	3	4	5
Is the assessment tool easy to use and comprehend?	Yes	Yes	Yes	Yes	Yes
Were you able to assess the wound condition and plan the management?	Yes	Yes	Yes	Yes	Yes
Were you able to correlate the wound condition with the changing score?	Yes	Yes	Yes	Yes	Yes
Were you able to make changes in your management approach based on the score?	Yes	Yes	Yes	Yes	Yes
Do you think the score needs modifications?	No	No	Yes	Yes	No

DISCUSSION

Accurate wound assessment is essential to effective wound management. It helps clinicians understand the wound's condition, select appropriate interventions, and recognise changes that may require modifying the treatment plan. However, wound assessment involves more than visual inspection; it requires systematic observation, clinical judgement and consistent documentation. Standardised assessment tools can support this process by providing a common framework for recording wound characteristics and communicating findings among healthcare professionals.[1–5]

The Bates-Jensen Wound Assessment Tool (BJWAT) provides a structured method of evaluating wounds through 13 characteristics. These include wound size, depth, edges, undermining, necrotic

tissue, exudate, surrounding skin condition, peripheral tissue changes, granulation tissue and epithelialization. Each characteristic is scored on a five-point scale, with lower scores representing more favourable wound characteristics and higher scores indicating greater tissue damage. The total score ranges from 13 to 65.[3,6,7]

In the present case, serial BJWAT assessments documented a reduction in the wound score from 52 at admission to 32 by the fourth week. Intervening assessments recorded scores of 46 and 36. This downward trend was consistent with the observed clinical progress during wound management, including wound-bed preparation and regenerative therapy. The numerical record, alongside the clinical photographs and examination findings, helped the treating team track changes in wound status over time.

The questionnaire completed by five plastic surgery trainees provided additional feedback on the tool's practical use. All five participants reported that the BJWAT was easy to understand and helped them assess the wound, plan management, correlate wound condition with the score, and adjust their management approach. Three participants felt the scoring system needed modifications. This feedback suggests the tool may support structured wound assessment and clinical discussions among trainees.

An important limitation of the BJWAT is that it primarily records local wound characteristics. It does not independently account for systemic factors that may influence wound healing, such as diabetes mellitus, anaemia, hypoalbuminemia and smoking. Assess these factors separately and consider them alongside the BJWAT score when planning treatment.

The BJWAT should be regarded as an aid to systematic wound assessment rather than a substitute for clinical judgement or a standalone measure of treatment outcome. Interpret its findings in the context of the patient's overall clinical condition, wound aetiology, and treatment course.

CONCLUSION

The Bates-Jensen Wound Assessment Tool provided a structured approach to documenting the clinical characteristics of a traumatic wound and monitoring changes during treatment. In this case, serial assessments showed a progressive reduction in the total BJWAT score from 52 at admission to 32 by the fourth week, supporting its usefulness in following changes in wound status over time.

Feedback from the plastic surgery trainees also indicated that the tool was easy to use and helpful in wound assessment and treatment planning. However, BJWAT primarily evaluates local wound characteristics and does not incorporate systemic factors that may influence healing. Therefore, it should be used alongside a comprehensive clinical assessment that considers the patient's overall health.

Further evaluation with a larger number of patients would help explore its broader clinical applicability and whether systemic factors should be incorporated into wound assessment.

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