

The assessment of pain in chronic wounds (part 2)

KEY WORDS

- ▶▶ Chronic wounds
- ▶▶ Pain
- ▶▶ Pain assessment
- ▶▶ Wounds

Chronic wounds impact on a person's quality of life and wound pain adds to that distress. It can be acute pain during wound care or background pain as a result of the chronic problem. Pain can be nociceptive and/or neuropathic. There are currently no validated tools for assessing pain in a person with a chronic wound. In this second article, what is required in the assessment of pain, in individuals with chronic wounds is presented. It also considers some of the tools recommended by the British Pain Society and Faculty of Pain Medicine's in their outcome measure (2019) recommendations, for assessing the biopsychosocial aspects of pain and some of the tools that are recommended for adults with cognitive impairment.

The prevalence of chronic wounds is not well established. Guest et al (2017) examined the economic burden of wounds in the UK and with data from 2012/13 they estimated that there were 2.2 million people with a wound. They also noted that there was a 12% rise in chronic wounds annually, predicting an increasing problem. Edwards et al (2014) reported that the prevalence of wounds ranged from 48% to 81% and that up to 46% of those studied reported moderate-to-severe pain. Chronic wounds and problems with healing are associated with diabetes, inflammatory disease, vascular problems (covering venous and arterial), pressure damage and vascular disease. They are characterised by a full-thickness tissue loss and are usually in the form of arterial ulcers, diabetic foot ulcers (DFU), venous leg ulcers (VLU), pressure injuries/ulcers (PU) or infected open surgical wounds/or from trauma (Holloway, 2020). Living with a chronic wound impacts on a person's quality of life (QoL) and wound pain adds to their distress (Price and Harding 1996). Pain in chronic wounds is very common (McGinnis et al, 2014; Ahn et al, 2015) and is as a result of non-healing and inflammatory processes. It is also a problem during the delivery of wound care. Despite how common it is, there is a lack of recent research in the area of chronic wound pain. Current guidance for pain management includes, appropriate, regular

pain assessment, provision of appropriate analgesia, consideration of the position of limb/support and the selection of appropriate wound cleansing agents and dressings.

Effective pain management is an essential part of wound care and for those with a chronic wound, this includes using appropriate pain assessment processes and use of a validated assessment tool or tools (Brown, 2015). There are a number of pain assessment tools available, either unidimensional or multidimensional. This article builds on part 1 on pain assessment in acute wounds (Jenkins, 2020) and considers pain assessment strategies and pain assessment tools that can be used in assessing pain in adults with chronic wounds.

Chronic wounds

Numerous definitions are used to identify and describe a chronic wound. Chronicity in wounds is described as a wound that does not heal within four weeks or, does not heal within an accepted time of receiving standard care (Moffatt et al, 2002). The descriptions are developed in relation to the wound healing process and if they do not respond to treatment (Briggs et al, 2007; Roth et al, 2004). Gould and Li (2019) support the United States Food and Drug Administration (FDA) definition for a completely healed wound: 100% reepithelialisation of the wound surface with

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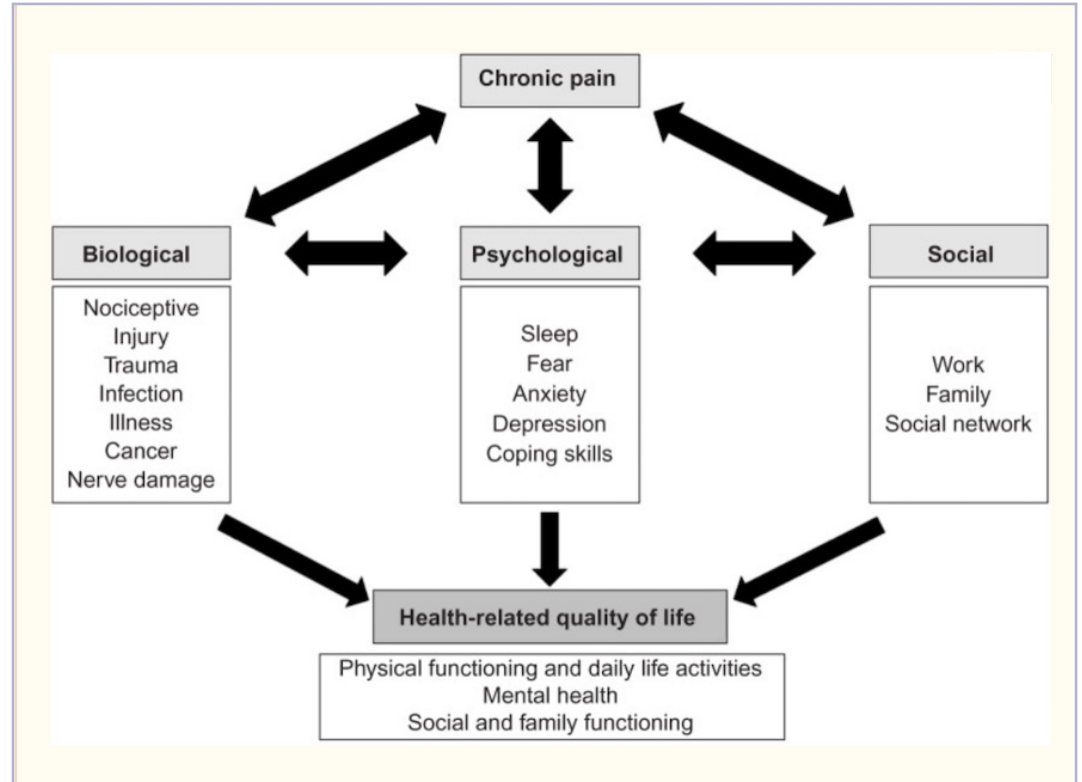


Figure 1. Biopsychosocial model of pain and consequences on the quality of life (Duenas et al, 2016) is this reproduced with permission

no discernible exudate and without drainage or dressing requirement, confirmed at two visits two weeks apart. (Gould and Li, 2019). All of this informs the understanding of skin, tissue and peripheral nerve problems that result in acute and chronic pain in wounds.

The impact of chronic persistent wound pain can include distress, anxiety, agitation and impaired mobility; it affects rehabilitation and results in increased health costs (Newbern, 2018). It can also affect adherence to treatment, if it is not appropriately managed.

Chronic pain

Pain is defined by the International Association for the Study of Pain (IASP) as ‘An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage’ (IASP, 2020).

Put into context:

- ▶ Pain is always a personal experience that is influenced to varying degrees by biological, psychological and social factors

- ▶ Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons

- ▶ Through their life experiences, individuals learn the concept of pain

- ▶ A person’s report of an experience as pain should be respected

- ▶ Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological wellbeing.

This definition is used by the British Pain Society (BPS) and the Faculty of Pain Medicine (FoPM). Bonica (1953), defined chronic pain as pain that persists beyond the normal range of healing. These definitions work well for a person with a chronic wound, as it has actual tissue damage and non-healing. Defined by time, chronic pain ranges from pain that persists or returns beyond three months (Nicholas et al, 2019). This is longer than wound healing, but is the same as it is affected by ‘not healing’. Chronic pain is complex and multidimensional in nature, with numerous factors affecting an individual’s experience of pain. Chronic

pain can also be subdivided into two groups, as chronic primary pain or chronic secondary pain (Treede et al, 2019). Chronic primary pain is from conditions such as fibromyalgia or non-specific low-back pain. Chronic secondary pain is secondary to another disease, surgery or injury. Chronic pain, in chronic wounds, is a type of chronic secondary pain. Chronic wounds can have chronic secondary neuropathic pain as well (IASP, 2019). Factors that affect the experience of chronic pain include physiological, psychological, social, cognitive and contextual factors (Hill, 2018; Woo, 2008). *Figure 1* presents the biopsychosocial consequences of pain on QoL (Duenas et al, 2016).

These reflect what is also experienced by individuals with a chronic wound, plus many will have other conditions and comorbidities that may add in other types of pain. Comorbidities may require other treatments, adding in contraindications in terms of prescribing analgesia (adjuvant analgesia), with other medications. All of which makes the assessment of pain complex, requiring a multifaceted comprehensive assessment that enables the health professional to consider the impact on the person's QoL and functioning. There are currently no evidence-based recommendations for the assessment of pain in a chronic wounds, but different pain tools are used in clinical practice.

Chronic wound pain can be nociceptive or neuropathic. These can be due to background (continuous) pain, incident pain and or procedural pain as a result of the activities during dressing change (Richardson and Upton, 2011) and pain assessment needs to be able to help identify these.

Holistic wound pain assessment

Swift (2015) states the purpose of pain assessment is to:

- » Detect and describe pain to help in the diagnostic process
- » Understand the cause of the pain to help determine the best treatment
- » Monitor the pain to determine whether the underlying disease or disorder is improving or deteriorating and whether the pain treatment is working.

There are many different strategies that can be used to undertake and document this; taking a person's history in addition to the assessment of the wound, healing, infection etc. The following

areas should be considered in a person with a chronic wound:

- » The pain type (nociceptive, neuropathic or mixed)
- » Duration of pain (chronic versus acute)
- » Impact of the pain
- » Palliative/provocative factors: what makes the pain worse? What makes it better?
- » Quality of pain: what kind of pain is experienced (sore, aching, burning, shooting, etc)? Are there other symptoms (fever, chills, nausea or vomiting?)
- » Region and radiation of pain: where is the pain? Where does it radiate?
- » Severity/Intensity of pain: would you describe the pain as none, mild, moderate, severe, or excruciating? Rate the pain on a scale from 0 to 10, with 0 representing 'no pain' and 10 being 'the worst pain imaginable'. What is the pain intensity at its worst, best, and now?
- » Temporal aspects of pain: is the pain better or worse at any particular time of the day or night? When does it start or when does it stop? Is it intermittent or constant, or does it occur only when you're moving?

Working through the list above, enables the health professional to 'talk to the person', or their family member/carer, to establish what their pain experience is, when it is worse and whether there are strategies that they use to manage their pain. It enables the 'conversation' to establish an overall picture of their pain and its impact. Having an understanding of the biopsychosocial model for pain and its management, provides a framework for health professionals to undertake their assessment and to make appropriate recommendations for its management in a chronic wound (not just around wound care). Non-pharmacological approaches including e.g. positioning or supporting of the limb/affected area adequately, allowing the person to remove their own dressing, distraction and relaxation strategies (Douglas and Way, 2006; Brown, 2015) are also important to consider and should be included in the planning of pain management. Involving the person in assessing for and discussing non-pharmacological approaches assists in maintaining the person/patient's autonomy and involvement in decision making about their care (person-centred care),

but also enables the involvement of carers and parents in pain assessment for those who have cognitive impairment.

Differentiating between nociceptive and neuropathic pain can be difficult. The individual will report different pain symptoms and these will help the healthcare professional to establish the different type of pain(s) they have. Nociceptive pain is described as sharp, throbbing, aching or stabbing. Neuropathic pain can also be described as stabbing and throbbing, plus burning and shooting, and individuals can report changes in sensation that are unpleasant and painful e.g. sensations of tingling, numbness, pins and needles occur. *Table 1* presents these changes and they are an important part of assessing pain in chronic wounds to help identify whether there is a neuropathic element to it. These are descriptors of what individuals report, when they have neuropathic pain a common problem in chronic wounds.

This means that the pain assessment process needs to consider what the person describes, especially in trying to establish the type of pain, to help identify appropriate pain management strategies and also fits wound care.

There are of course other dimensions to assess and for some groups of patients that will require the observation of behaviour. In brief, those with cognitive impairment (e.g. Dementia, aphasia/dysphasia, intellectual disabilities, brain injury) may not be able to describe their pain, therefore other non-verbal cues need to be considered e.g. holding or rubbing the affected area, wincing, rocking back and forth, reluctance to move and crying out in pain (Booker and Haedtke, 2016). Increased heart rate

and blood pressure can be used, but should not be used alone as indicators. There may be language barriers, but many pain assessment tools are now available in multiple languages. All of this needs to be considered within pain assessment and selection of pain assessment tools.

Pain assessment tools

There are currently no validated pain assessment tools specifically for chronic wounds (Frescos, 2018; Frescos, 2019). There is a wound pain assessment tool (Wound pain assessment tool), however, a literature search did not identify any research to support its validity. The complex nature of chronic pain poses many challenges and there are validated tools for assessing chronic pain available. In order to consider how pain in chronic wounds should be assessed with a validated tool, the Outcome Measures' guidance developed by the British Pain Society (BPS), Faculty of Pain Medicine (FoPM) (2019), for the biopsychosocial assessment of chronic pain in multidisciplinary pain services, will be considered as they recommend the areas that need to be considered. The guidance is based on evidence-based review of their validity and reliability. It is acknowledged that they are for pain services, not specific to wound pain, however, chronic wounds are also managed from a biopsychosocial perspective and by a multidisciplinary team. The recommendations are for the type of pain assessment that should be undertaken and covers the following, relevant domains (*Table 2*).

Table 2 presents unidimensional and multidimensional assessment tools. Pain quantity

Table 1. Peripheral and central changes due to nerve injury or peripheral neuropathy (adapted from Colloca et al 2017)

Sensation	Description
Dynamic mechanical allodynia	A type of mechanical allodynia that occurs when pain is elicited by lightly stroking the skin.
Expectancy-induced analgesia	A reduction of pain experience due to anticipation, desire and belief of hypoalgesia or analgesia.
Hyperalgesia	A heightened experience of pain caused by a noxious stimulus.
Hypoalgesia	A decreased perception of pain caused by a noxious stimulus.
Paradoxical heat sensation	An experienced sensation of heat provoked by a cold stimulus.
Pruriceptors	Sensory receptors that transduce itchy sensations.

Table 2. Pain Domains and recommended pain assessment tools (British Pain Society and Faculty of Pain Medicine, 2019)

Pain Domain	Pain assessment tool	Type of tool
Pain Quantity	Numerical Pain Rating Scale (NPRS) Visual Analogue Scale (VAS) Verbal Rating Scale (VRS)	Unidimensional
Pain Interference	Roland & Morris Index Oswestry Low Back Pain Disability Questionnaire	Back Pain Not suitable for wounds
Physical Functioning –	Brief Pain Inventory (BPI)	Multidimensional
Emotional Functioning	Beck Depression Inventory (BDI) Centre for Epidemiologic Studies- Depression Scale (CESD) Hospital Anxiety and Depression Scale (HADS) Short Form MOS-36 (SF036) Profile of Mood states (POMS) Pain Catastrophising Scale Patient Health Questionnaire – 2 Pain Self Efficacy Question-naire (PSEQ)	Multidimensional
Quality of Life	EuroQol 5D	Multidimensional
Patient reported global rating	Patient Global Impression of Change (PGIC)	Multidimensional

or measurement uses unidimensional pain tools, that assess one dimension of the pain experience. They should be simple and quick to use and understand. The rest of the pain assessment tools listed in *Table 2* are multidimensional tools (sometimes referred to as a questionnaire). They are used to assess the different dimensions of pain and its impact e.g. neuropathic, behavioural and psychological aspects. Some of the assessment tools recommended will be considered, pain interference is excluded as they are validated for back pain. The assessment tools are for individuals who do not have cognitive impairment (that can provide self-report of pain where possible). They also relevant to consider as outcome measures for future research, in an area that is currently lacking current evidence.

Pain quantity

The Visual Analogue Scale (VAS), Verbal Rating Scale (VRS) and Numerical Pain Rating Scale (NPRS) are recommended and were also recommended for pain assessment in acute wounds (Jenkins 2020). They enable quantification and measurement of a person's

report and scoring of pain during wound care, to establish the level of chronic pain and to evaluate effect of pain relieving strategies (pharmacological or non-pharmacological). The NPRS is highly correlated with VAS for construct validity and it is also reliable in both literate and illiterate people (British Pain Society and Faculty of Pain Medicine, 2019). The NPRS is short and takes less than a minute to complete and score. It is appropriate for assessing other dimensions such as pain distress and pain interference (British Pain Society and Faculty of Pain Medicine, 2019), an important aspect of assessing the impact of pain in chronic wounds. The VRS is a list of adjectives describing different levels of pain, starting with 0=no pain to 4=very severe pain. This is also easy to use and understand and has good compliance. Whilst the VRS scale is also quick and easy to use, there are issues around understanding the pain descriptors, and are less reliable in those that are illiterate (British Pain Society and Faculty of Pain Medicine, 2019). They are all appropriate to use when assessing pain during wound care and to measure effect of a pain treatment (including relevant dressings)..

Physical functioning

Both a chronic wound and pain have an impact on a person's life (Upton, 2014; Solowiej et al, 2009) and affect wound healing. The assessment of wounds is guided by assessment of the wound bed area for healing and signs of infection and pain can be lower down the recommended list of assessment. However, people report pain as being one of the most difficult symptoms of chronic wounds to deal with, impacting on their lives and functioning (Neil and Munjas 2000; Biets and Goldberg 2005). The Brief Pain Inventory is recommended for chronic pain assessment because it is multidimensional. It also enables the person to write on a body map where their pain is. This is important in people with multiple comorbidities as it provides the opportunity to report more than one pain/pain site if needed (relevant to wound assessment). It then uses the numerical rating scale to assess the impact of pain on activities of daily living and effect of pain management. This provides the health professional with an assessment of whether there is an impact. It is psychometrically and linguistically validated in many languages (British Pain Society and Faculty of Pain Medicine, 2019), making it more accessible. It can also identify populations that are at risk of falls, which includes those with chronic leg ulcers, diabetic neuropathies, vascular ulcers. Obtaining a broad assessment of the impact of pain and the chronic wound, enables the health professional to identify other areas of the person's care that needs to be addressed.

Emotional functioning

Long-term conditions can result in emotional distress and mental health issues e.g. depression, low mood, fear and anxiety (Duenas et al, 2016; *Figure 1*). Chronic wounds are associated with many psychosocial issues e.g. increases stress, sleep disturbance, negative mood and social isolation (Upton, 2014). Emotional functioning is an important part of the biopsychosocial assessment. Pain and depression are believed to be correlated from a neurological perspective (Sheng et al, 2017) and they both result in long-term health problems (Linton and Bergbom 2011), supporting the need to assess it. The BPS and FoPM have identified many valid and reliable tools for assessing emotional functioning. The BDI and HADS are appropriate to

use, as they can be used widely in chronic conditions and are easy to use (British Pain Society and Faculty of Pain Medicine, 2019). The BDI measures characteristic attitudes and symptoms of depression, asking questions about e.g. how they are feeling, feeling guilty. Each question has four options to select one from, scoring from 0–3 for each one. The higher the score the more severe depression (Indiana State Medical Association). The HADS also asks a series of questions of how they are feeling with four options and scoring. HADS fits on one page and is therefore easier to complete (Hospital Anxiety and Depression Scale). These are short tools that can be used to identify whether an individual may have depression or not. These tools will aid the health professional to identify whether there is a need for them to have mental health reviewed (referral to appropriate assessment and management).

Patient reported global rating

The PGIC asks the individual to rate how much his/her condition has improved or deteriorated since a pre-defined time point (Hurst and Bolton, 2004). It is a short questionnaire, made up of one single question, plus a numerical rating scale, easy to administer and easy to interpret. This is useful because it enables the long-term evaluation of what the individual thinks of the wound care/pain management strategy introduced at a previous appointment, visit or clinic.

Pain assessment tools for non-verbal older adults/those with cognitive impairment

An evidence-based approach is also required for the assessment pain in this group, plus the involvement of family members and carers, who will know what a change in behaviour looks like. Self-report of pain may be achievable and should be the first choice of pain assessment, using some of the unidimensional tools already discussed (Booker and Haedtke, 2016). Tools recommended for use in this group include Pain assessment in Advanced Dementia Scale (PAINAD) and Doloplus-2 are recommended as they are valid and reliable (Schofield, 2018).

DISCUSSION

Wound care may cause severe pain, Gardner (2017) found that 74% of patients reported moderate-to-severe pain during wound care, with 36%

experiencing pain rates as 8–10 on a 10 point scale. Added to the chronic background pain, this needs to be managed effectively. To reduce the experience of pain, the assessment of pain in chronic wounds needs to include different strategies. A discussion with the individual or their family or carer needs to be undertaken to establish what and where the pain is, whether it is having an impact on their life and what strategies can be introduced to the management plan. This is something that all health professionals can do and document. Clear and timely documentation of the assessment should be undertaken and this will inform care planning and administration of appropriate pain relieving strategies. The biopsychosocial model offers a practical and holistic perspective for addressing the assessment and treatment of individuals (Engel 1977; 1980). It also provides a framework for pain and healthcare education. Undertaking pain management education would be beneficial for those working in wound healing and tissue repair. Pain assessment provides an evaluation of treatment effect and involves the individual in their management. It is acknowledge that the Outcome Measures guidance (British Pain Society and Faculty of Pain Medicine, 2019) is for pain services, however, wound care teams and pain services need to work together to identify appropriate tools to use in wound care (where there is one). Some of the assessment tools are copyright protected but the local pain service may already have approval to use them. Biopsychosocial assessment is essential to understanding a person's experience of pain (or different types pain) and provides a holistic approach to pain management of chronic wounds. Patients with cognitive impairment are more complex to assess, while observational assessment can help, there are some validated pain assessment tools recommended. This was only briefly discussed within this article.

There is a lack of recent research or evaluations on the incidence, prevalence and impact of pain in chronic wounds. The recommended outcomes measures/assessment tools help guide management and treatment options, but also provide an opportunity to evaluate a service or undertake research with validated tools. Working together teams can build on this with the overall aim of improving patient care.

It is acknowledged that this article has only considered the assessment of pain in people with cognitive impairment with chronic wounds briefly. There are valid and reliable pain assessment tools available for observational and behaviour assessments (Schofield, 2018).

CONCLUSION

Pain in chronic wounds is a problem and the complexity of chronic pain and chronic wounds pose many challenges to providing effective pain management. Pain assessment is essential to identifying appropriate pain management strategies in individuals with chronic wounds. A biopsychosocial assessment is required through discussion and use of assessment tools. Validated tools are available for the assessment of pain quantity, physical functioning, emotional functioning and a person's global rating. Due to the lack of validated pain assessment tools for those with chronic wounds, these validated chronic pain tools should be considered. Working with a local pain service can help identify appropriate tools and those that are used locally. **WUK**

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