Chronic wounds have many psychosocial consequences, including stress, negative mood, pain, and social isolation. In addition to these, frequent dressing changes can cause the individual anxiety and stress. This article explores how wound management can influence both psychological outcomes and, potentially, the rate of healing. Implications for practice are identified, which need to be successfully employed to ensure that patient health is maximised and that the stress and pain associated with wound care are minimised in order that wound healing is improved.

KEYWORDS:
Psychosocial issues ■ Stress ■ Anxiety ■ Pain

Chronic wounds can cause a considerable amount of pain and discomfort for patients, and can impact on their quality of life and well-being (Solowiej and Upton, 2010; Upton et al, 2014). There are a number of different types of pain (Table 1) that can result from a chronic wound, including chronic pain caused by wound treatment, and anticipatory pain as a result of negative experiences, e.g. from the dressing change (Solowiej et al, 2010), or other forms of treatment (e.g. negative pressure wound therapy [NPWT]) (Upton and Andrews, 2013).

As highlighted, pain is a common feature of wounds and it may not only be attributable to the wound itself. Dressing removal, cleansing, inappropriate dressing selection and debridement can each contribute to wound-related pain (Solowiej et al, 2009). Research has shown that such wound-related treatments are often reported as the most painful (Solowiej et al, 2009). For example, an international survey of dressing-related pain revealed that more than 62% of participants experienced pain for up to two hours after dressing change procedures (Price et al, 2008).

### Table 1: Types of wound-related pain

<table>
<thead>
<tr>
<th>Type</th>
<th>Cause</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic background pain</td>
<td>Neuropathic pain can occur from injury or trauma which causes nerve damage and subsequent malfunction of the central nervous system (CNS)</td>
<td>Neuropathic pain is often chronic and can last for months or years. The pain can become independent from the initial trauma or damage</td>
</tr>
<tr>
<td>Pain at wound treatments</td>
<td>Nociceptive pain occurs when receptors (nociceptors) sense and respond to parts of the body that suffer from damage or trauma. It can be caused by trauma to a wound or the surrounding tissue when dressings are applied or removed. Wound cleansing (swabs, cold liquids, topical antiseptics) can also initiate acute pain</td>
<td>Nociceptive pain can be both acute and persistent as a result of tissue damage. However, it is generally localised to the wound and the surrounding tissue</td>
</tr>
<tr>
<td>Anticipatory pain</td>
<td>If patients perceive wound treatments to be painful from previous experience, this can initiate pain signals to the CNS. Patients’ anxiety and expectations of pain at wound treatments can cause them to experience pain before the treatment has been administered</td>
<td>Anticipatory pain is usually quite short in duration. It is dependent on the individual patient’s perceptions</td>
</tr>
</tbody>
</table>

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Furthermore, such procedures can also negatively impact on a patient’s daily routine (Solowiej et al, 2009), by either taking time out of the day to attend wound management procedures, or through the wound dressing impacting on daily activities. For example, Finlayson et al (2009) identified that in a sample of 122 patients with venous leg ulcers, more than half used padding or covered their legs, or avoided going outside or being in any situation which might cause trauma to the legs. Similarly, Mudge et al (2006) highlighted that footwear was a central focus of patients’ body image, causing them embarrassment and affecting their enjoyment of social life. It also impacted on what patients chose to wear, with many feeling that wearing trainers was unacceptable with a skirt, and therefore wore trousers.

The pain and stress associated with wound care can be significant factors in the patient experience and influence the clinician–patient relationship, and thus should be recognised and addressed by clinicians.

**STRESS AND ANXIETY**

A series of studies have also indicated how stress and anxiety may be linked to increased wound-related pain at dressing change, and consequently impaired healing (Solowiej et al, 2009). Stress may be due to anticipation of pain, as patients who have had a previous bad experience may fear that dressing changes are going to be painful. For example, Woo (2010) asked 96 patients to indicate their anticipatory pain before their dressing change and to rate the pain intensity at various times during dressing changes. Results identified that anxiety was significantly associated with:

- Anticipatory pain
- Pain at dressing removal
- Pain during wound cleansing.

That is, those patients who experienced higher anxiety levels, anticipated more pain than patients with lower levels of anxiety.

Research has also illustrated the negative consequences of prolonged stress on healing time (Solowiej et al, 2009). Upton et al (2012) also explored the link between pain and stress at dressing change by recording psychological and physiological measures from 43 patients at baseline and during dressing changes. Significant differences were discovered between baseline and dressing change responses for heart rate, pain rating, stress rating and anxiety. All measurements indicated higher scores during dressing change, highlighting increased pain and stress.

Based on these results, the author concluded that chronic stress levels impact upon pain and stress intensity during dressing change, or that continual, regular experiences of pain and stress caused by the wound and dressing change contribute to chronic stress which may impact on healing rates (Figure 1).

Figure 1 illustrates one potential relationship between the experience of pain and stress at dressing change, and its implications for delayed healing of chronic wounds. Stress may bring with it negative physiological consequences, including increased cortisol levels (Ebrecht et al, 2004). Not only does this hormone negatively impact on the immune function, but it can lead to delayed wound healing (Ebrecht et al, 2004), subsequent reduction in quality of life and increased chronic stress. Clinicians should acknowledge the cumulative impact of stress at dressing change, and consider whether the dressing selected may actually be increasing stress...
for the patient. For example, appropriate dressing choice can improve the condition of the wound bed and surrounding tissue, and also reduce both pain and stress associated with dressing change (World Union of Wound Healing Societies [WUWHS], 2007).

To explore this further, Upton et al. (2012) reported on the stress and pain levels in patients being treated with either conventional or atraumatic dressing types. The findings of the research demonstrated that patients receiving atraumatic dressings as part of their wound treatment experienced significantly lower self-reported episodes of acute pain and stress at dressing change, in comparison to patients being treated with conventional dressings. Furthermore, the atraumatic group had reduced physiological signs of acute stress in comparison with the conventional dressing group, including lower heart rate, blood pressure, GSR, and salivary cortisol at dressing change.

It is clear from Figure 1 that there is a recurring theme with regards to a patient’s experience of pain: stress and subsequent further pain. The initial pain that patients experience due to their wound can lead to heightened levels of stress and anxiety. In turn, this stress lowers the patient’s tolerance and pain threshold, making patients more vigilant to somatic signals and subsequently experiencing heightened pain (Upton, 2011). This could make each dressing change more painful than the last and, in turn, have negative implications on patient concordance to treatment.

‘...there is a recurring theme with regards to a patient’s experience of pain: stress and subsequent further pain. The initial pain that patients experience due to their wound can lead to heightened levels of stress and anxiety’

Healthcare professionals need to use their clinical skills to break this cycle and reduce pain/stress and thereby improve the patient experience and the clinician–patient relationship. This can be achieved not only by choosing the most appropriate dressings, but also through promoting a relaxed and calm environment and using stress management techniques, such as relaxation, to try and ease the patient’s stress and anxiety (Richardson and Upton, 2012).

Simple distraction techniques to focus the attention away from the stressful experience, can also help to reduce stress and pain and improve healing rates (Richardson and Upton, 2010). For example, pain has been reduced during wound cleansing by getting the patient to focus on sensory aspects of the procedure, i.e. cleansing solutions, as opposed to the pain caused by the treatment (Keogh and Mansoor, 2001).
Healthcare professionals may also want to evaluate how a patient copes with wound care and provide information on different coping strategies. This may involve increasing social support. For example, getting a patient involved in a Leg Club gives them the opportunity to talk and share experiences with others, which can help them to deal with the stressors associated with their wound (Edwards et al, 2005; Moffatt et al, 2009). It has been reported that when leg ulcers are treated at community-based leg clubs, healing times appear to be reduced, suggesting that the management of psychosocial factors through social support (as well as effective evidence-based treatment) can help wound healing and prevent recurrence (Edwards et al, 2005).

It has been suggested that patients prefer to be actively involved in dressing changes, which can reduce the experience of pain. Likewise, effective communication throughout will help healthcare professionals to understand the needs of the patient, particularly in terms of preferences for pain relief (Solowiej and Upton, 2012).

PAIN

As pain is a highly subjective experience, pain and stress should be assessed by healthcare professionals on an individual basis, noting the intensity and the effect it has on a patient’s life, as well as any instances which may exacerbate pain and stress (Solowiej and Upton, 2012).

Table 2: Checklist of non-verbal pain indicators (Feldt, 2000)

<table>
<thead>
<tr>
<th>Vocal expressions</th>
<th>Moans, grunts, cries, sighs, gasps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial expressions</td>
<td>Wincing, grimace, furrowed brow, tightened lips, jaw drop, clenched teeth</td>
</tr>
<tr>
<td>Bracing</td>
<td>Clutching nearby furniture, or affected area of pain</td>
</tr>
<tr>
<td>Restlessness</td>
<td>Shifting position, hand movements, unable to keep still</td>
</tr>
<tr>
<td>Rubbing</td>
<td>Touching, holding, rubbing or massaging affected area</td>
</tr>
</tbody>
</table>

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These behaviours can be indicative of instances of pain, while also enabling healthcare professionals to understand the varying levels of pain patients are experiencing during wound care (Upton and Solowiej, 2010).

However, if a clinician needs a more formal measure of pain (i.e. to assess improvement or change over time), there are a number of self-report pain measures that can be used.

Verbal pain rating scale (vprs)/numerical pain rating scale (NPRS)

These self-report scales can be administered to patients, and require them to define their pain from a list of descriptive words such as mild, discomforting or excruciating (i.e. a verbal pain rating scale [VPRS]), or numerically, such as, 0 = no pain to, 100 = severe pain (i.e. a numerical pain rating scale [NPRS]). Both these types of scales can be advantageous in that they can be administered to measure pain intensity at differing intervals, over a period of time in a simple and efficient manner, and are easy to understand both by the patient and the clinician. However, such scales may be inaccurate due to the potential for patients to recall previous ratings, thus influencing their current rating.

Visual analogue scale (VAS)

This self-reported measure entails drawing a cross or mark between anchors of non-verbal pain indicators (Feldt, 2000) and the most severe pain the patient can imagine. The line can be % complete, or the pain can be measured numerically using a scale from 0 to 100. The pain intensity is then calculated based on the distance from the zero end of the scale. The VAS is a sensitive and effective tool for the management of wound-related pain (Upton and Solowiej, 2010). Not only should healthcare professionals adopt formal assessments, but it is also important to acknowledge individual patient behaviours, both verbal and non-verbal (Table 2), as these may be more apparent, and more quickly assessed than through formal questionnaires.

KEY POINTS

- Increases in pain cause slower healing, which can result in a downward spiral of poor-healing and subsequent poor emotional responses.
- Maintaining a calm environment throughout care and using stress management techniques, such as relaxation, may ease the patient’s stress and anxiety.
- Healthcare professionals may also want to evaluate how a patient copes with wound care and provide the patient with information around different coping strategies.
- Encouraging patients to focus on the positive sensations and outcomes of treatment, as opposed to the pain, may reduce the pain and stress experienced by patients.
somewhere on a pre-defined line (usually 10 cm in length) with pain descriptors on either end, enabling the healthcare professional to determine their patient’s pain intensity. This more abstract measure reduces the ability for patient’s to recall where they previously located their pain. Subsequently, the effects of practice bias that may be evident with the VPRS and NPRS are significantly reduced.

Pain diaries

Pain diaries can be used to provide a personalised and detailed account of pain over the day during daily routines, social activities, and wound management procedures. This can include either a narrative report or a self-assessed pain rating at specific times.

The McGill Pain Questionnaire (MPQ; Melzack, 1995)

Another more multifaceted assessment tool is the McGill Pain Questionnaire (MPQ). This measure is designed to account for various components, including the description and location of pain, changes in pain over time and factors that relieve or increase pain. This is in conjunction with a measure of pain intensity. A significant advantage of the MPQ is its ability and sensitivity to changes in treatment regimen, enabling clinicians to assess and compare patient’s experiences of pain over a length of time. In addition, the MPQ can provide clinicians with detailed information of particular treatment strategies in relation to multiple dimensions of pain (sensory, affective and evaluative).

CONCLUSION

Healthcare professionals should understand how pain and stress can have a negative impact on the emotional state of an individual, and the effect that this has on healing. In particular, stress and chronic pain can lead to delayed healing and a vicious spiral of increased pain, stress, delayed healing and chronic pain.

Given these serious consequences, it is crucial that healthcare professionals try and manage stress, or minimise it as far as possible. There are a number of psychological techniques available to help manage or resolve these issues. These need to be employed successfully to ensure that the stress and pain associated with wound care are minimised, which in turn will improve healing rates.

REFERENCES


Woo K (2010) Wound related pain and attachment in the older adults. 2010; Lambert Academic publishing, Saarbrucken, Germany