The cost of mood disorders in patients with chronic wounds

Understanding the causes of mood disorder in chronic wound patients and how best to prevent them is essential to encourage wound healing and avoid the substantial clinical, social and economic burden placed on individuals and society.

Chronic wounds have been described as, 'a silent epidemic that affects a large fraction of the world population and poses a major threat to the public health and economy' (Sen et al, 2009). Posnett and Franks (2007) estimate that there are over 200,000 patients with chronic wounds in the UK alone. However, with an aging population and an increasing incidence of concomitant factors, such as obesity and diabetes, it is possible that this figure has increased significantly and will continue to do so.

The treatment of chronic wounds has been estimated to cost the NHS between £2bn to £3bn, which is approximately 3% of the annual UK healthcare budget based on figures for 2005 to 2006 (Posnett and Franks, 2007). However, exact costs are impossible to calculate since wound severity and prognosis can differ considerably between patients. For example, it has been shown that 80% of the costs are incurred by the 20% of cases in which ulcers have failed to heal after two years (Rippon et al, 2007). Nevertheless, there are a range of factors that need to be considered when calculating such estimates, including:

- Cost of dressing materials
- Average hospitalisation rates
- Average healing time
- Complication rates.

However, one aspect that has previously been overlooked is the cost, both to the patient and to the NHS, of dealing with the psychological consequences of living with a chronic wound. Patients with chronic wounds can experience many negative emotions, such as:

- Stress
- Concern about physical symptoms
- Lack of self-worth
- Feelings of despair.

There is considerable evidence that wounds can lead to negative emotional states, such as anxiety and depression (Guo and DiPietro, 2010). These can vary in severity, from minor negative emotions to suicidal thoughts, depending on the individual case (Upton and South, 2011; Upton et al, 2012). These psychological symptoms are referred to as 'mood disorders' and can place a substantial clinical, social and economic burden on individuals and society (National Institute for Health and Clinical Excellence [NICE], 2009).

Not surprisingly, the true incidence of mood disorders in chronic wound patients is not known, although Jones et al (2006) report that, out of 190 chronic wound patients, 27% were recorded as depressed and 26% as anxious, categorised according to the Hospital and Anxiety Depression Scale (HADS) (Zigmond and Snaith, 1983).

A more recent survey of healthcare practitioners suggests the figure may be even higher, with clinicians estimating that 57% of their chronic wound patients may be suffering from a wound-related mood disorder (Upton et al, 2012). Although this study reported from a healthcare professionals' perspective and, therefore, recorded a proxy measure of the rate of mood disorders, it is interesting to note that experienced wound care professionals suggested that

'There is considerable evidence that wounds can lead to negative emotional states, such as anxiety and depression'

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over half of their patients had a mood disorder. Mood disorders can have a significantly negative impact for patients and healthcare providers on:

- Patient wellbeing
- Quality of life
- Financial costs associated with sickness absence and treatment.

The financial burden of depressive disorders in the UK was calculated to be in excess of £9bn in 2000, of which £370m directly related to treatment costs (Thomas and Morris, 2003). Therefore, the financial burden on society could be reduced with more widespread awareness, recognition and appropriate interventions (Greenberg et al, 1999).

Similarly, the costs of treating mood disorders associated with chronic wounds could be significant. Jones et al (2006) reported that 27% of chronic wound patients were suffering from depression. This would equate to 54,000 out of the estimated total of 200,000 chronic wound patients in the UK. Alternatively, using estimates from wound care professionals of 57% (Upton et al, 2012), a potential 114,000 chronic wound patients could be experiencing a wound-related mood disorder.

A report on depression and anxiety disorders from the London School of Economics (LSE, 2006) discusses the scale and economic costs of mental illness and advocates the effectiveness of psychological therapies, to reduce the overall cost of treatment and dependency on social security benefits. They estimate the average cost of treating depression or chronic anxiety at £750 per patient. Therefore, the additional cost of treating chronic wound patients for mood disorders could amount to between £40.5 and £85.5m per year.

In addition to the direct cost of treating mood disorders, many studies have shown that they can impact negatively both on wellbeing and wound healing. As a consequence, the physiological effects of stress and anxiety result in delayed healing (Kiecolt-Glaser et al, 1995; Ebrecht et al, 2004; White, 2008, Upton, 2011). This can prolong wound treatment costs and can be a socioeconomic burden because of absence from work, disability benefits and early retirement (Eberhardt and Raffetto, 2005; Herber et al, 2007; Posnett and Franks, 2007).

Indeed, if there is such a high incidence of mood disorders in chronic wound patients it raises the question of the causality or whether mood disorders should be considered a comorbid condition.

Non-healing chronic wounds can affect patients emotionally (Fletcher, 2008), and can increase the likelihood of mood disorders. This can lead to a potential vicious circle with negative emotions affecting healing (Upton and South, 2011). Therefore, it is important to understand the causes of mood disorder in chronic wound patients and how best to prevent them if increased costs are to be avoided.

CAUSES OF MOOD ORDERS

Studies have shown that patients living with long-term wounds often experience poor psychological wellbeing and a reduced quality of life (Beitz and Goldberg, 2005). Mood disorders contribute significantly to this negative experience for wound patients, as well as other factors, such as reduced mobility, sleep disturbance, and pain.

It has been suggested that patients with acute and chronic wounds often experience mood disorders as a result of pain caused from the wound itself, as well as from wound treatments (Cole-King and Harding, 2001). In other words, the experience of wound pain can be perceived as a stressor by the patient, leading to mood changes and depressive disorders (Wales, 2006; Coutts et al, 2008). In a systematic review of studies on the impact of leg ulcers on daily life, Persoon et al (2004) listed pain as the first and most dominant factor.

Similarly, Jones et al (2006) found prolonged pain and malodour were the two specific symptoms associated with anxiety and depression. Wound-related pain at dressing changes has also been shown to correlate with stress and anxiety (Solowiej et al, 2009; Woo, 2010). The relationship between pain and anxiety could be due to the patient being more sensitive to pain because of increased anxiety and fear, particularly if this is based on a past experience (Mudge et al, 2008; Woo, 2010). Alternatively, patients

suffering higher pain levels are more likely to become stressed and anxious.

Prolonged pain can impact on the patient's mobility. Mobility restrictions have been described as one of the worst aspects of living with a chronic wound (Hamer et al, 1994) and affect every area of the patient's life, limiting their ability to work (Harlin et al, 2009) or perform household tasks (Woo et al, 2009; Leegaard et al, 2010). Even attending to personal hygiene may become difficult (Fox, 2002), as previously independent patients become reliant on others and report a loss of self-worth and role reversal within families (Douglas, 2001).

In younger patients, pain and mobility restrictions can impact on working capacity and enforce early retirement (Herber et al, 2007). These factors impact on self-worth, independence and cause social isolation and, as a consequence, psychological mood disorders can result. Ultimately, restricted mobility (because of pain) and mood disorders can contribute to a loss of income for the patient, a loss of tax revenue and increased benefits from the state. This is in addition to the prolonged cost of medical treatment for the wound and associated mood disorders (LSE, 2006; NICE, 2009).

When constantly dealing with a large number of chronic wound patients in a time and resource-poor environment, it may be difficult for practitioners to fully appreciate the impact a chronic wound can have upon an individual's life. The focus can often be directed towards treating the wound rather than the associated sequelae (Briggs and Flemming, 2007). But, with pain, stress and mood disorders potentially influencing the physiology of healing and patient concordance, as well as causing increased treatment costs, the psychology of the patient should not be forgotten.

Chronic pain

Given the numerous negative effects of pain, it is not surprising that healthcare practitioners believe unanimously that reducing chronic wound pain could improve patients' mood disorders significantly (Upton et al, 2012). If controlling pain more effectively can affect mood it should also impact on healing rates, as evidenced by the wealth of research into how stress can delay wound healing (Cole-King and Harding, 2001; Soon and Acton, 2006; Woo, 2010; Gouin and Kiecolt-Glaser, 2011). However, in an interactive wound care survey of 246 wound conference delegates, only 35% of NHS community staff and 44% of NHS hospital staff considered that wound pain was being addressed sufficiently (Lloyd Jones et al, 2010).

Standardised care

In addition to pain management, Fletcher (2008) presents a 'best practice statement care pathway' suggesting that wounds should be cared for in a standardised way, with clear objectives, regular reviews and onward referral to a specialist when patients are not progressing as expected. She advocates that wound care should address every need of the patient in order to maximise their quality of life, taking an holistic approach, which may involve addressing concurrent issues such as:

- Poor nutrition
- Illness
- Infection
- Environment.

Listening to, and involving patients in a collaborative care plan with appropriate goals is also important (Dowsett, 2008) and may help to reduce the incidences of mood disorders. Understanding the needs of the patient and using the most appropriate dressings to achieve improved healing are vitally important in helping patients avoid mood disorders and, ultimately, reduce treatment costs.

CONCLUSION

The cost implications of mood disorders in chronic wound patients can be considerable. These not only include the extended costs of treating a non-healing wound, but also the £40.5m–£85.5m incurred in treating mood disorders directly. In addition, there is the potential loss of tax revenue and the increased cost of benefits and social services.

Pain and restricted mobility have been shown to be important factors contributing to mood disorders. Therefore, successfully managing pain and a using an holistic approach to patient care could have incalculable benefits for the patient and considerable economic benefits to health care providers and society. WUK

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