Impact of exudate and odour from chronic venous leg ulceration


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**Abstract**

**Aims** To explore depression in people treated for chronic venous leg ulceration, and to assess the impact of excessive exudate, leading to leakage and odour, on their daily lives, overall health and quality of life.

**Methods** Completion of a questionnaire and Hospital Anxiety and Depression Scale to determine the prevalence of anxiety and depression in people with chronic leg ulceration (n=196), and interviews with 20 people living with chronic leg ulceration.

**Findings** Odour and excessive exudate leading to leakage had an adverse effect on patients' psychological state, leading to feelings of disgust, self-loathing and low self-esteem.

**Conclusion** Chronic leg ulcers disrupt patients' lives and restrict their social lives, leading to social isolation and depression. Healthcare professionals should better understand the impact of symptoms such as odour and exudate leakage on patients' mental health, physical health and healing.

**Author** June E Jones is tissue viability nurse, Sefton Primary Care Trust (PCT) and Southport PCT, and senior lecturer at Edge Hill University, Lancashire. Jude Robinson is senior lecturer and Wally Barr is research fellow, Health and Community Care Research Unit, University of Liverpool, Liverpool; and Caroline Carlisle is professor, Department of Nursing, Midwifery and Health Visiting, University of Manchester, Manchester. Email: june.jones2@seftonpct.nhs.uk

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CHRONIC VENOUS LEG ULCERATION caused by venous insufficiency is a serious condition, particularly among older people (Margolis et al 2004). The prevalence of leg ulceration is difficult to ascertain, with estimates varying from 0.11% to 4.3% of the adult population (Briggs and Closs 2003). However, Briggs and Closs (2003) concluded that the prevalence of open ulceration, that is, ulceration known to health professionals, is approximately 0.11% to 0.18% with the percentage of recurrence in the region of 1% to 2% of the adult population. Venous leg ulcers often take years to heal (Briggs and Closs 2003), and studies consistently demonstrate the considerable length of time during which patients experience episodes of ulceration (Callam et al 1987, Nelzen et al 1997, Noonan and Burge 1998). Nicolaides (2000) stated that after two years, 20% of all chronic venous ulcers remain unhealed.

Leg ulceration has a significant effect on quality of life (Hareendran et al 2005), yet research on the experience of living with a venous leg ulcer is limited. In a study by Hollinworth and Hawkins (2002), 50 qualified nurses were asked how they provided holistic care to patients with wounds. Although the nurses identified patients' feelings of isolation and misery, they also recognised that they did nothing to address these issues, as they felt they were too busy treating the clinical symptoms of the wound.

Leg ulcers are chronic wounds because they take weeks or months to heal due to substantial loss of epidermis and dermis. While moisture is a necessary and normal part of healing, an overly wet wound may damage the wound bed, as well as the surrounding skin (Cutting and White 2002). This can cause maceration or excoriation of the surrounding skin, leading to infection, increased odour and hypersensitivity. Bishop and Warr (2003) described wound exudate as a 'corrosive' biological fluid, with the potential to cause considerable discomfort, as well as tissue damage (Moore 2003). Odour, or malodour, is often the result of the multiplication of, and colonisation by, bacteria in a heavily exuding wound (Van Toller 1992). Increased production of exudate may be associated with high bacterial growth in the wound, inadequate compression of venous ulcers, inappropriate dressings or wear time, oedema and lymphoedema (Cutting and White 2002). Exudate production will also be exacerbated if the patient sits with his or her legs in a dependent position all day.

Walsh (1995) and Bland (1995) explored the experiences of patients with leg ulcers and found...
that, while pain emerged as the most profound experience of chronic leg ulceration, leakage and smell also caused a great deal of distress, especially as they were often associated with repeated infections. Leakage and smell were also common occurrences that had to be managed for the 12 women interviewed in Hyde et al’s (1999) study. The researchers seem to have highlighted some distressing symptoms, but appear most concerned with ensuring that the symptoms of ulceration are given a profile as opposed to the impact of the leakage and smell of the ulcer on individuals’ lives.

Aims

This article draws on data from a wider study (Jones 2007), which explored depression in people treated for chronic leg ulceration, and assessed the impact of excessive exudate leading to leakage and odour on their daily lives, overall health and quality of life.

Methods

This study consisted of two related phases of data collection and analysis:

- Phase 1: a survey to determine the prevalence of anxiety and depression in people with chronic venous ulceration in nine NHS trusts in the north west of England.
- Phase 2: a qualitative exploration of the experiences of people living with chronic leg ulceration.

Phase 1

Following NHS multi-centre research ethics committee approval, in accordance with research management and governance requirements, clinical nurse specialists and lead clinicians in leg ulcer management or tissue viability at nine NHS trusts were approached and agreed to recruit participants to the study. Inclusion and exclusion criteria: The sample included individuals aged over 18 years with active ulceration of a minimum of three months’ duration, determined by history, clinical appearance and an ankle brachial pressure index (ABPI) reading to rule out arterial insufficiency (Royal College of Nursing (RCN) Institute 1998). Exclusion criteria included people with rheumatoid arthritis or diabetes since these conditions may result in depression which is not related to leg ulceration (Anderson et al 2000). Those with an ulcer caused by a medical condition other than venous insufficiency, for example malignancy, were also excluded. A total of 196 participants were recruited to this phase of the study.

Baseline questionnaire: Baseline data were obtained via a questionnaire, covering demographic characteristics, aspects of medical history, mobility and pain. A further section asked for ulcer specific information – patients were asked if odour was present, recorded as ‘none’, ‘some’ or ‘offensive’, and the level of exudate, as either ‘light’ (or minimal), ‘moderate’ or ‘heavy’ (Thomas 1997).

Hospital Anxiety and Depression Scale (HADS)

Participants were given the HADS (Zigmond and Snaith 1983) to complete at the time of their leg ulcer treatment in the clinic, at home or to take away and complete when convenient. The HADS is designed to detect the presence and severity of relatively mild degrees of mood disorder. The score is determined on scales of 0 to 3, with the most negative response receiving the highest score. The HADS has seven questions relating to anxiety and seven questions relating to depression which are designed to detect the presence and severity of relatively mild degrees of mood disorder in the general population. In this study, as in the study of chronic wounds by Cole-King and Harding (2001), a cut-off total score of nine was used for both subscales.

Analysis of phase 1 data: In this phase of study, conducted in 2003/2004, all data obtained from the questionnaire and HADS were entered by the researcher onto a database in SPSS™ for Windows version 12. Descriptive statistics were used to describe demographic and diagnostic data. Cross-tabulations were performed using the Chi-square test to determine the degree of association between two or more non-continuous variables, such as sex, or continuous variables that have been categorised, for example age in years to age groups. The Chi-square test for independence used data from the baseline questionnaire to determine associations between any of these variables as well as anxiety and depression, with a significance level of 5% being accepted and a two-tailed test used throughout.

Phase 2

For this phase of the study, 20 participants were purposively selected (Patton 2001) from the 196 participants identified in phase 1 of the study (Morse 1991, Denzin and Lincoln 2000). Participants were chosen because of their expert knowledge and experience of living with venous ulceration.

All eligible participants were sent a letter inviting them to take part in the study and this was followed up by a telephone call one week after the expected receipt of the letter. Interviews took place between January and December 2004. In total, 12 women and eight men were interviewed by a single interviewer (JJ), with ages ranging from 52 to 86...
and a mean age of 68 years. Twelve were married, six widowed and two single. Sixteen participants had active ulceration while ulcers in four had healed within the previous two months. All were English speaking, and represented a variety of socio-economic backgrounds, from factory workers to professionals, although 13 were retired, four were housewives, one person received incapacity benefit and the remaining two still worked. Six people lived alone while the others lived with spouses or family members.

The aim of this phase of the study was to elicit stories of the individuals' experiences of living with chronic venous ulceration, and to 'generate' meaningful descriptions. All interviews took place in the participants' homes, and began by asking them to talk about those with whom they lived, to describe when they first experienced ulceration, and what they perceived to be the cause. Following the principles of hermeneutic phenomenology, a largely unstructured approach was adopted, since hermeneutic interviewing is interpretive and not governed by predetermined questions (Sorrell and Redmond 1995, Koch 1996). All interviews were taped and transcribed verbatim and stored on the NVivo software data management system (Richards 2005).

Analysis of phase 2 data Individuals were provided with pseudonyms to anonymise the data, so protecting the identity of participants. The analysis framework used parts of both Colaizzi's (1978) framework with its ideas of 'significant statements' and van Manen's (1990) structure which aims to present rich and evocative descriptions of lived experience (Jones 2007).

Findings

Phase 1 A total of 52 (27%) people scored as depressed, while 50 (26%) scored as anxious (Jones et al 2006). When anxiety and depression were analysed against factors such as mobility, living alone, pain, exudate and odour, two of the factors which appeared to be associated with a high HADS score were odour and exudate. Only 11 (6%) individuals had no exudate. For 22 (11%) the exudate amount was heavy, while 157 (83%) individuals reported minimum to moderate amounts of exudate from their ulcers. A total of 108 (55%) participants reported that the presence of odour was associated with the level of exudate. Using data obtained from the first questionnaire, the Pearson Chi-square test for independence showed a significant association between anxiety and odour ($P<0.001$) and depression and odour ($P=0.002$).

Phase 2 While leaking, wet leg ulcers are regular occurrences in patients with leg ulceration. This study found that, for people experiencing their first episode of ulceration, this has an all-consuming impact on their ability to get on with everyday living. Three key themes around odour (excessive exudate leading to leakage and smell) were identified from the data: the emotional response to odour; the limitation of social activities resulting from a fear that odour might be present; and the ways in which odour, or fears about the presence of odour, were managed by nurses.

Emotional responses to odour Participants articulated freely about how they had been revolted by the smell from their ulcer, and how this smell resulted in feelings of shame, disgust and self-loathing. Mr Williamson described being able to smell his ulcer when he was taking his family on holiday by car:

'We were going on holiday to Cornwall and as the air conditioning was working in the car you could get this drift of a smell coming up from your leg... it was disgusting... like something decaying... like a dead rat.'

The ability to smell their ulcers affected participants' ability to carry out everyday tasks. The fear that other people could smell the ulcer was enough for them to curtail or restrict social activities. Mr Williamson did not mention if any of his family members had said they could smell his ulcer, nor did Ms Warlow, who was certain that her husband would be able to smell her leg. One evening she asked her husband repeatedly if he could smell anything because she was so convinced that the terrible smell was from her leg:

'One night we were having our meal and I could smell dead flowers and I asked my husband if he could smell my leg... when we went to bed I could still smell dead flowers and I asked him again if he could smell my leg.'

Mr Davies also experienced malodorous wounds that caused him embarrassment, distress and affected his self-esteem. He admitted that he became insufferable to be with because he was so frustrated and angry:

'I was uncomfortable because I felt that this leg was offensive to people. So I was in a sort of catch-22. If you could smell yourself rotting away, you know it's horrible, it's a horrible thing. It's worse than any horror movie. To just have your leg was offensive to people. So I was in a sort of catch-22. If you could smell yourself rotting away, you know it's horrible, it's a horrible thing. It's worse than any horror movie. To just have your leg...

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Mr Davies was expressing his experience of changing from a predictable body to an uncertain one. It was interesting that he referred to himself as if he was 'rotting away' since Mr Williamson and Ms Warlow used similar descriptions of decay, as did Ms Hall:

'I used to wake up at night and I could smell it, you know it used to make me feel really depressed. Yes, terrible. Like dying flesh, you
know a really bad smell... like something dead in the same room.

There is an overwhelming sense of loss of control in these descriptions, where participants tried to manage their condition but failed. Mr Davies described desperately trying to mask the smell but the exudate seemed to be everywhere, despite using plastic covers and protectors:

‘There was so much exudate from it, although we put plastic covers and protectors, still this exudate... bedclothes, the bedding, the room was beginning to smell evil.’

Limitation of social activities For some participants, oozing wounds, wet bandages and the concomitant risk of odour were the worst aspects of ulceration, and they described how these prevented them from socialising. Mr Whalley, who had a 30-year history of ulceration, said:

‘Well, like I say, it takes all the beauty out of it because you cannot do anything, you cannot go anywhere, you can’t go and mix with friends because of the smell... you are frightened of going out, whether people can smell anything like... it zaps all your confidence.’

Mr Davies, who at 69 had experienced ulceration for three years, said: ‘I realised that I smelled like the clinic smelled... I didn’t want to go to keep in touch with friends... you would get a whiff of yourself and think god... I was miserable and morbid and then occasionally I would get so frustrated I would be verbally aggressive.’

Symptoms were not always immediately visible, or obvious, to the onlooker as described in the following examples:

‘The worst thing about them is that when they smell, you can’t go out, they smell that strong and it’s... once in the bar people went phew... what’s that smell? I thought, should I stand my ground and ignore it or shall I slope off and then they are going to say it should have been him.’ This account was from 58-year-old Mr Myers, who had an eight-year history of ulceration.

‘It [the ulcer] limits what you can do... it makes you want to hide. Because if you get into a room and someone says “oh there is a funny smell here” [long pause]... it might not be you, but oh god is it? You feel conspicuous,’ said Ms Healy, who had a five-year history of ulceration.

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thinking about their ulcer (Hyland et al 1994).

Many frustrations for the individuals came from the changes to their bodies resulting in loss of ability to participate in family and social activities, which had repercussions for their sense of self-identity (Charmaz 1987).

The presence of odour can lead to isolation due to embarrassment, since odour often carries a social stigma (Douglas 2001, Rich and McLachlan 2003). Even the perceptions of odour and leakage affected participants’ social life, since fear of the smell alone influenced their participation in social situations. Social isolation and negative self-image were expressed when 73 individuals with ulceration were interviewed about quality of life factors (Phillips et al 1994). These sentiments were echoed in studies by Charles (1995) and Krasner (1998), who identified that fear of additional trauma and the stigmatising effect of an offensive wound were reasons for withdrawal from social activities. In Moffatt et al’s (2006) matched case-control study of 113 patients, the authors identified that patients with ulceration had deficits in their perceived social support compared with the general population. This was reinforced in the present study with individuals commenting on feelings of isolation as a direct result of ulceration.

The stories provided by the participants during the interviews have furthered understanding of people’s experience of living with excessive exudate leading to leakage and odour. By gaining such insights into people’s perceptions, clinicians are in a better position to meet individuals’ needs for treatment, support and advice. There is a growing awareness of how important it is to understand patients’ perspectives on chronic illness experiences, and that evaluations of interventions are informed by patients’ views (Department of Health 2004). Yet the results from this study suggest that symptoms of odour and leakage are not controlled by the timing or nature of the treatment patients receive from healthcare services, and that emotional distress they may feel goes unrecognised or does not prompt a response from the person treating them. People often feel they are alone with their ailments, or feel disqualified from social activities due to stigmatisation as a result of chronic illness.

People are ashamed when they feel different and are embarrassed when someone appears to be staring at them. A stigmatised person may start to isolate him or herself from the social milieu, not only to avoid embarrassment, but
also to avoid embarrassing friends. Because their social identity is spoiled, often they are left feeling inadequate (Goffman 1963). The way people view themselves is an important part of their everyday lives (Salter 1997). If this view changes it can have psychological implications for the way people behave (Price 1990). Stigma affects people psychologically, often lowering self-esteem, and can aggravate psychiatric morbidity. This may lead to withdrawal or, at the very least, participation restrictions (Arole et al 2002), again demonstrated by the individuals in this study. These findings resonate with seminal work by Charmaz (1983) who described the ways in which stigma associated with chronic disease may prompt people not only to experience feelings of low self-esteem, but also to withdraw from activities such as work or going out socially.

Nurses should not be concerned solely with the disease process, but also with people’s lives and the effects of illness on their lives. To ‘look into’ another’s world and empathise with their experiences, nurses have to enter that person’s world. This can be achieved by listening to what the patient says and how he or she makes sense of the world and acknowledging requests, for example for extra dressing changes to reduce the risk of excessive exudate leading to leakage and concomitant odour. This is important not least because poor management of exudate is recognised as a barrier to granulation and epithelialisation (Jones and Harding 2001). In addition, excessive levels of exudate have been found to cause distress and affect quality of life (Price 1998). The continuous documentation on wound exudate reinforces the need to listen to any concerns a patient may have (World Union of Wound Healing Societies 2007).

Conclusion

The findings of this study indicate that chronic leg ulcers disrupted individuals’ lives, shattering their plans, hopes and dreams, and restricted their social lives, leading to social isolation and depression for many. These findings reinforce the need for healthcare professionals to understand better the impact of symptoms such as odour and leakage on patients’ mental health, physical health and healing NS

IMPLICATIONS FOR PRACTICE

- Healthcare professionals should ensure that they are mindful of potential emotional disturbances and depression in people with long-term ulceration.
- Chronic venous ulceration is physically and emotionally disabling.
- Treating depression may not heal the ulcer but could improve an individual’s quality of life.