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Title: Social Isolation and Humour in Coping with the Stress of Living with Venous Leg Ulceration: A Case Study

Authors: William Baldrige RN, MSc Candidate, Independent Prescriber, Newcastle upon Tyne Hospitals NHS Foundation Trust

Sian M Edney, Lecturer, Centre for Medical Education, Cardiff University

Key points:

- **Problem focused coping strategies are useful for managing stress when situations are controllable, but emotion focused coping strategies are more useful for managing stress in uncontrollable situations.**
- **It is crucial to address and minimise wound odour by identify and treating the underlying causes**
- **Humour is an emotion focused coping strategy that individuals may use to both reframe negative thoughts and to allow themselves to feel safe in the face of uncertainty, but it shouldn't be assumed that humour use represents a lack of patient distress.**

Summary

Venous Leg Ulceration (VLU) significantly impacts quality of life, through pain and malodour, and feelings of stress, depression, anxiety, and helplessness (Cifuentes and Guerrero 2020; Rook et al. 2023). Psychological symptoms can slow healing due to stress-exacerbated biological processes (Cole-King and Harding 2001; Wynn and Holloway 2019). This case study examines stress and coping theories to help develop insight for person-centred care, and more specifically social isolation and humour as coping strategies for living with VLU.

Case Overview

'Penny' (pseudonym), a 66-year-old female, self-referred to the local specialist wound care service with a 10-month history of VLU. Penny felt self-conscious of wound odour,

and was apprehensive to use compression hosiery long-term. Prior to the ulceration, Penny was active, worked and travelled with friends. In contrast, she was spending more time isolated indoors, resulting in mobility decline. Penny felt that the ulceration had become the focus of her life, expressed feeling helpless and was concerned that she would 'never heal'. The acquired VLU disrupted physical, psychological and social aspects of her life. Penny was observed to use humour whilst communicating these concerns to healthcare professionals.

Chronic Wound Healing, Stress and Coping

Stress may slow wound healing (Cole-King and Harding 2001; Wynn and Holloway 2019). Stress impacts acute wound healing due to increased glucocorticoids and catecholamines that reduce biomarkers, such as matrix metalloproteinases, which alter the phases of wound healing (Basu et al. 2022). The release of stress hormones, such as cortisol, impairs the inflammatory response needed for effective wound healing (Frasier et al. 2024). However, many authors emphasise that further research is needed to accurately evaluate how chronic wound healing is influenced by the presence of psychological stress (Charalambous et al. 2018; Basu et al. 2022; Frasier et al. 2024).

Stress may also indirectly influence healing due to the promotion of health-damaging behaviours; such as influencing poorer dietary choices and reduced physical activity (Gouin and Kiecolt-Glaser 2012). Conversely, coping strategies may wield influence over wound healing outcomes (Frasier et al. 2024). For example, seeking social support, distraction and maintaining a positive outlook, including humour, are evidenced as helpful for coping with the challenges of living with chronic wounds (Upton et al. 2021). It is crucial to comprehend the complex interplay between stress and coping and their influences on chronic wound healing (Frasier et al. 2024).

The Psychology of Stress and Coping

Two theories of stress and coping were applied to this case: the Generalised Unsafety Theory of Stress (GUTS; Brosschot et al 2018) and the Transactional Model of Stress and Coping (TMSC; Lazarus and Folkman 1984).

Lazarus and Folkman (1984) believed that individual cognitive appraisal of a situation leads to stress. This individual appraisal can lead to different outcomes and levels of distress, even in identical situations, through individual evaluation on whether an incident threatens their wellbeing, and where the threat severity is judged by the perception of impact severity (Berjot and Gillet 2011). The reliability of research supporting the TMSC, however, is questioned due to small study sample sizes and simplified applications (Obbarius et al. 2021).

Conversely, Brosschot et al. (2018) hypothesised that stress is the default state and that individuals learn how to feel safe. Brosschot et al. (2018) suggested that the stress response is always activated and only inhibited when safety is perceived. Contrary to Lazarus and Folkman, Brosschot et al. (2018) proposed that stress responses have minimal conscious awareness and that 'stressors' are not entirely necessary for a stress response, particularly where chronic stress is experienced.

According to Stanislawski (2019), there is an assumption that individuals have two tasks to perform under stressful circumstances: one, to solve or manage the problem and secondly, to regulate their emotions. Stanislawski argued that these tasks are often not applied appropriately in research due to a lack of understanding on how individuals operate these (i.e. often oversimplified) and further defined the problem-focused and emotion-focused coping dimensions of Lazarus and Folkman's model. Stanislawski argued that there are either negative or positive emotional coping dimensions involved in combinations of problem solving or problem avoidance, such as:

- 'Efficiency' (a combination of problem solving and positive emotion coping) versus 'helplessness' (a combination of problem avoidance and negative emotional coping).
- 'Preoccupation with a Problem' (combination of problem solving and negative emotional coping) versus 'Hedonic Disengagement' (combination of problem avoidance and positive emotional coping).

Stanislawski suggested the effectiveness of coping strategies in reducing stress depends on how controllable the situation is, i.e. in controllable situations, mostly problem focused coping strategies are less stressful and in uncontrollable situations, mostly emotion focused strategies are less stressful.

Furthermore, the term 'intolerance of uncertainty' (IU) describes an individual's inability to endure adverse responses driven by inadequate understanding, which may be sustained due to related perceptions of uncertainty (Carleton 2016). Stress being the default response to uncertainty (Brosschot et al 2016). This may seem like a novel concept; however, Brosschot and colleagues have been praised for reforming prior views, supporting the notion that uncertainty and worry are factors that prevent a sense of safety (Freeston and Komes 2023) and highlights a relationship between safety recognition and stress responsivity (Madison 2021). GUTS and IU are particularly relevant theories to the case. Penny felt worried and uncertain of the future and GUTS considers loneliness and interruptions to social interaction as inducers of a chronic stress response; specifically, loneliness could result from lacking a safe social network.

Social Isolation and Wound Odour

Wound malodour is often caused by bacterial colonisation, poor vascularisation and devitalised tissues or a combination of these problems, therefore, offensive wound odour is not associated with normal wound healing; but there are evolutionary benefits in signalling danger (Ousey et al. 2017). Penny had been isolating at home due to feeling self-conscious and embarrassed by wound odour.

Patients report that malodour is a constant reminder of a wound (Gethin et al. 2023). Social isolation as a means of coping with malodorous wounds is a common theme in literature (Gethin et al. 2014; Benbow 2015; Ousey et al. 2017; Gethin et al. 2023). Patients living with chronically malodorous wounds report distress, feelings of guilt and repulsion (Ousey et al. 2017), as well as shame, which can lead to an inability or refusal to socialise (Klein et al. 2021). Self-isolation helped Penny cope with shame relating to wound odour, but the repercussions included declining mobility and increased weight. The short-term advantage of self-disgust motivated social avoidance as an adaptive response to distressing stimuli is that patients may be motivated to seek treatment to find resolution (Reynolds et al. 2015). Penny's stated main motivation to seek treatment was to regain her social life, which had been affected by wound odour.

In applying GUTS (Brosschot et al 2018) to the case, persistent malodour may have preserved a sense of unsafety in Penny, and coping behaviours like self-isolation may have contributed to that sense. Clinicians should formulate management plans that encompass both containment of odour and the treatment of underlying causes (Probst 2015). A lack of consensus on the standardised assessment of wound odour outcomes has been identified; consensus is needed to better determine the contributions of interventions (Gethin et al 2023b). However, to restore Penny's perceived sense of safety, and to improve her physical activity and willingness to socialise, identifying the underlying cause of wound odour was fundamental in formulating an appropriate management plan.

Humour as a Coping Strategy

Penny negatively associated compression hosiery with individuals older than herself and appeared self-conscious at the idea of wearing garments. When expressing a dislike for the look of hosiery, Penny compared herself to her mother in a sarcastic manner and visually, she appeared to find this humorous, with audible laughter at the notion. Moreover, when discussing hosiery fabric and colour choices, Penny proposed her partner would find her attractive in them, which was also said in a sarcastic and self-deprecating fashion. Nevertheless, these instances of humour were observed alongside genuine concerns about ageing and body image.

Humour can be described as an individual's efforts to reduce stress through emotional responses (Endler and Parker 1994) and is considered an emotion focused stress coping strategy (Folkman and Moskowitz 2004). The use of humour in a threatening situation can shift focus from an emotion and reduce a feeling of tension; a mechanism called a 'cognitive-affective shift' (Bast and Berry 2014). Humour may act as a buffer against the negative effects of stress (Abel 2002; Chinery 2007) and can reduce distress by highlighting the ironies of stressors (Mauriello and McConatha 2007).

In this case, Penny appeared to use humour as a buffer against her negative views on hosiery and their impacts on body image. 'Positive reinterpretation of a stressor' (Stanislawski 2019), or 'reframing' is considered a positive emotional coping strategy

and reframing is something that many therapies focus on, e.g. Cognitive Behavioural Therapy (Terjesen and Doyle 2022). As such, humour may enable individuals to reframe negative events to feel less threatening (Fritz et al. 2017). Thus, when faced with a stressful event, humour may help maintain wellbeing by reframing negative thoughts. In regards to GUTS (Brosschot et al. 2018), humour may have helped Penny cope with feeling unsafe. Stanisoawski (2019) proposed that well-being can be momentarily maintained through a combination of positive emotional coping and problem avoidance, known as hedonistic disengagement. In this sense, humour may help momentarily maintain emotional wellbeing, but may avoid addressing the underlying problem (Simione and Gnagnarella 2023).

Penny may have adopted this strategy to momentarily preserve emotional wellbeing during conversations about body image. The potential impacts of compression hosiery on self-image have previously been acknowledged (Hughes and Green 2019). Therefore, despite concerns being communicated alongside humour, it is crucial for clinicians to recognise this as a potentially emotional response to distress. However, humour is subjective, making it a complex area to meaningfully study (Bast and Berry 2014). Therefore, humour should be carefully considered on an individual patient basis (Sousa et al. 2019).

Conclusion

The VLU appeared to greatly impact Penny's wellbeing and social needs, largely due to social isolation in response to malodour. In this case, addressing wound odour was imperative to tackling Penny's social isolation, weight gain and reduced mobility, which are health behaviours that may hinder physiological healing processes (Gouin and Kiecolt-Glaser 2012). Wound odour should be addressed and minimised by identifying and treating its underlying causes (Gethin et al. 2023a). There is a need to standardise the assessment of wound odour interventions and their outcomes (Gethin et al. 2023b).

Humour has been reported as a helpful coping strategy for patients living with chronic wounds (Upton et al. 2021). By maintaining emotional wellbeing (Simione and Gnagnarella 2023), humour may aid an individual's ability to cope when discussing distressing topics (Sousa et al. 2019). Whilst humour may temporarily alleviate a

feeling of unsafety in individuals, clinicians should recognise the use of humour as a potential strategy to cope with distress. Conversely, clinicians should not assume that humour use represents a lack of distress. Recognising and exploring the concerns communicated with humour in this case was crucial to providing adequate support to an individual living with a chronic wound. In this case, humour was observed to aid an individual's ability to communicate the impacts of body image and ageing as a consequence of VLU. Nevertheless, individual appraisal of a stressor can result in variable outcomes (Lazarus and Folkman 1984), and humour use should be evaluated on an individual basis (Sousa et al. 2019).

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