

<p>Institution: University of Worcester</p>
<p>Unit of Assessment: 4 Psychology, Psychiatry and Neuroscience</p>
<p>Title of case study: Improving the experience of patients with acute and chronic wounds</p>
<p>1. Summary of the impact</p> <p>It is estimated that there are over a quarter of a million patients with chronic wounds in the UK, and the cost to the NHS is approximately £2-3 billion per year (approximately 3% of NHS budget), with an additional £85-100 million costs as a consequence of psychological disorders associated with chronic wounds. Wounds can place a substantial clinical, social and economic burden on individuals and society. Research examining the relationship between pain and stress and wound healing has had significant benefits for patients with chronic and acute wounds; it has improved clinical practice in wound care; it has led to the development of new wound dressing materials which reduce the pain and stress associated with dressing change; and has brought economic benefits to the business that initially commissioned the research.</p>
<p>2. Underpinning research</p> <p>Professor Dominic Upton (Professor of Health Psychology, 2005-present) in collaboration with colleagues at Worcester (Dr Victoria Mason (2006-2012) whose work is focused on the psychology of pain; Professor Richard White (2009-present) Visiting Professor in Tissue Viability) and externally (Kevin Woo, Queen's University, Ontario, Canada) has engaged in research examining the impact of pain and stress on wound healing. The research has established an innovative and clinically relevant hypothesis that has been tested and found to demonstrate the relevance of psychological constructs (i.e. stress and pain) in wound healing and management.</p> <p>In 2008, Upton was awarded the first of a series of grants from a medical supplies company (Grants a-e) to explore the relationship between pain, stress and wound healing. Initially, a systematic literature review was undertaken exploring the well-documented relationship between stress and delayed healing (Reference 1). Subsequently, a study examining the experiences of patients with wounds at dressing change was completed. It highlighted an increase in recorded stress and pain through both physiological and psychological measures (Reference 2). The study suggested that dressing change was a cause of stress. It was hypothesised that this stress could lead to impaired healing and this hypothesis was supported by both a worldwide survey of clinicians (Reference 3) and a smaller UK-based study (Reference 4).</p> <p>In addition, through an ecologically valid clinical study, stress and pain levels were compared in patients with atraumatic dressings (i.e. dressings which are associated with less skin trauma during removal) and patients with conventional dressings. It was found that the use of atraumatic dressings resulted in lower stress and pain levels and, since pain and stress are associated with delayed healing, atraumatic dressings may potentially lead to faster healing (Reference 5). This hypothesis is now being tested in on-going studies exploring healing rates in people with higher levels of wound management stress.</p> <p>This study has also demonstrated the value of new, technologically advanced, wound dressing materials (safetac technology) and to its wider use. This particular form of dressing is more costly per unit but less painful in its application and removal. The research reveals that this wound dressing results in less pain and less stress for patients and as a consequence wound healing rates are potentially quicker and the overall costs less in the long-term (Reference 5).</p>
<p>3. References to the research</p> <ol style="list-style-type: none"> 1. Solowiej, K, Mason, V & Upton, D (2009). A review of the relationship between psychological stress and wound healing (Part one). <i>Journal of Wound Care</i>, 18(9), 357-364. 2. Upton, D, Hender, C, Solowiej & K, Woo, K (2012). Stress and pain associated with dressing change in chronic wound patients. <i>Journal of Wound Care</i>, 22(2), 53-61. 3. Upton, D., Solowiej, K. & Woo, K (2013). A multinational health professional perspective of the prevalence of mood disorders in patients with acute and chronic wounds. <i>International Wound Journal</i>, Online First. DOI: 10.1111/iwj.12018.

Impact case study (REF3b)

4. Upton, D., Hender, C. & Solowiej, K. (2012). Mood disorders in patients with acute and chronic wounds: a health professional perspective. *Journal of Wound Care*, 21(1), 42-48.
5. Upton, D. & Solowiej, K. (2012). The impact of atraumatic vs. conventional dressings on pain and stress. *Journal of Wound Care*, 21(5), 209-215.

Grants

- a. Upton, D., Mason, V. & White, R. (Co-Is), The physiological and psychological impact of pain on wound healing, 2008, Mölnlycke Healthcare, £10,000.
- b. Upton, D. (PI), Stress and Wound Healing, 2009, Mölnlycke Healthcare, £25,000.
- c. Upton, D. (PI), Stress and Wound Healing: Follow-up, 2009, Mölnlycke Healthcare, £12,000.
- d. Upton, D. (PI), Stress and pain in chronic wound care, 2012, Mölnlycke Healthcare, £18,000.
- e. Upton, D. (PI), Patient experience of *Avance*, NPWT treatment, 2012, Mölnlycke Healthcare, £18,000.

The University is confident that the underpinning research meets the 2* quality threshold. The overall excellence of References 2-5 has been recognised through a Journal of Wound Care Award (see below). Reference 1 has been cited 30 times placing it in the 5th percentile for applied psychology for 2009. Reference 4 is returned to UoA4 in REF2014 as “Solowiej1”.

4. Details of the impact

The primary beneficiaries of these studies have been patients with chronic wounds. With the research aiming to improve the practice of clinicians, the care and outcomes for patients are also improved. Furthermore,

The research has been widely disseminated through national and international conferences, e.g. European Wound Healing Association conference (Helsinki, 2009; Geneva, 2010; Copenhagen, 2013), Wounds UK congress (Harrogate, November 2011, 2012), World Union of Wound Healing Societies (Yokohama, 2012), and seminars and meetings for clinical practitioners, e.g. Annual Leg Club workshops. Findings have also been presented in journals, both for academic audiences (e.g. *Journal of Wound Care*, *International Journal of Wound Care*, and *European Journal of Dermatology*) but also for practitioners (e.g. *British Journal of Healthcare Assistants*, *British Journal of Community Nursing*, *Nursing Times*). In addition, web-based lectures, Q&A sessions and other resources have been developed and disseminated world-wide through, for example, the “less-pain” website, a resource for clinicians that hosts a series of Upton’s presentations and publications (**Source A**).

Thus every effort has been made to ensure that practitioners are aware of the research and its relevance for them. The fact that psychological factors can have a significant influence on wound care and wound healing has demonstrated to clinicians how their practice can affect a patient’s well-being. As a consequence patients are treated holistically with an increased focus on pain *and* stress reduction. The psychological consequences of wound care are more understood by clinicians and better care has resulted. The patient experience has therefore been dramatically improved. Evidence from national patient support groups (e.g. Lindsay Leg Club) has indicated that improved patient experience has been a significant consequence of the research (**Source B**). In March 2013, Upton and his team won the *Journal of Wound Care* (JWC) Award for Patient Experience. These awards are designed to recognise innovation and excellence in research and practice related to wound care practice and in this case specifically for improving patient experience (**Source C**). The citation noted that his “work has provided significant insight into the patient experience of wound healing providing clear evidence of the stress associated with having a wound and the impact that this may have on patient outcomes. Through innovative research, the team at the University of Worcester have presented not only theoretical findings but also practical guidelines and recommendations”.

The research has also had an impact on the economic success of an international business (Mölnlycke Healthcare), by increasing awareness of their new technology - the research was used as the basis of the company’s marketing campaign for Safetec (**Source D**) - and increasing their sales and market share (**Sources E & F**). Since the initial research was completed in 2009, the

Impact case study (REF3b)

sales of Safetac have increased significantly and market penetration and recognition has similarly increased: there are now growing markets in Asia, Pacific Rim and North America for their product that were previously in their infancy (**Source E**). Whilst there are many factors involved in the company's improved performance, Mölnlycke Healthcare support the view that this research has played a significant role in the increased sales, increased recognition and increased market share of Safetac (**Source F**).

As a consequence of Mölnlycke Healthcare's success in marketing atraumatic dressings, other medical supplies companies are also developing similar technologies in order to improve the experience of patients with acute and chronic wounds.

5. Sources to corroborate the impact

- A. <http://less-pain.com/Home/>
- B. Letter from Ellie Lindsay, Founder and President of the Leg Club Foundation - The Leg Club Foundation was created by Ellie Lindsay, to relieve suffering from leg ulcers and associated conditions through the implementation of an award winning model that motivates and empowers patients to take ownership of their care.
- C. JWC Award Supplement/nomination - this supplement details the award, the nomination and the value placed on the work by clinicians, colleagues and patients.
- D. Mölnlycke Healthcare Medical promotional material
- E. Letter from Mölnlycke Healthcare
- F. Mölnlycke Healthcare Medical Marketing report detailing the extensive work of Professor Upton and how it relates to the overall strategy of the marketing campaign for Safetac.