Assessing the value of practice-based leg ulcer education to inform recommendations for change in practice

## Abstract

**Purpose** – The purpose of this paper is to assess the value of accredited leg ulcer education in influencing changes in practice.

**Design/Methodology/approach** – This is a before and after educational evaluation which adopted a qualitative survey approach of 12 primary care nurses attending the Nurse Led Assessment and Management of Leg Ulcers accredited CPD module at a London university.

**Findings** – The findings revealed that 6 out of the 8 nurses who completed the final interviews were satisfied that all learning outcomes for the module had been met. All of the nurses commented they had changed at least one aspect of practice following the module with the majority stating a number of improvements had been made relating to improved knowledge, practical skills, treatment and patient concordance.

**Limitations** –The evaluation was limited to a small cohort of primary care nurses and further longitudinal research is required to investigate the effectiveness across multiple cohorts.

## Introduction

Leg ulcers are a significant health problem worldwide and are defined by NICE (2013) as an open lesion between the knee and ankle joint that takes more than 2 weeks to heal. According to Guest et al. (2015), there are at least 730,000 patients with leg ulcers in the UK, equating to 1.5% of the population, with 278,000 diagnosed as venous and 420,000 unspecified (i.e. lacking true diagnosis). It is estimated that the annual cost to the NHS of managing wounds is between £4.5-5.1 billion, with two-thirds of the cost incurred by the community and secondary care (Guest et al., 2015). In addition, the estimated annual cost of

chronic venous insufficiency (CVI) is between 600 – 900 million to 2.5 billion euros across Western Europe and the USA (Rabe and Pannier 2010). The prevalence of leg ulcers is not a static problem and is increasing with an aging population (Franks et al., 2016). Research suggests that Chronic Venous Insufficiency (CVI) is one of the most commonly reported conditions in the western world (Fowkes et al, 2005). It is complex and multifaceted and is often the main cause of venous disease (81 %) (O'Brien et al, 2000). Early assessment and intervention can reduce symptoms, secondary complications and slow or control disease progression (Todd, 2012). This could have a direct impact on the NHS ensuring that the Commissioning for quality and innovation (CQUIN) targets (improving the assessments of wounds) are met and quality care is provided for patients potentially reducing venous leg ulceration in the future.

## Venous leg ulceration (VLU)

VLU currently affects 1% of the population with 3% of those over 80 years old and accounts for approximately 83% of the community caseload (Posnett et al., 2009). However, despite the recognised impact VLU has on the NHS, leg ulcer care appears to fall short of the recommended standards. A recent study by Guest et al (2015) found that only 16% of all patients with a leg or foot ulcer in the UK had a Doppler (ABPI) assessment recorded in their notes. This is despite national guidelines which, state, that failure to decrease wound size by 20-30% by 4-6 weeks despite optimal compression therapy automatically classifies an ulcer as complex (Harding, 2015; Wounds UK, 2016). These findings are echoed by community nurses who traditionally have reported that they lack sufficient knowledge, training and practical skills in leg ulcer treatments and management (Chamanga et al., 2014; Guest et al.2015). This may account for disparity amongst professionals with selecting and applying

appropriate compression therapy and healing rates (Day, 2015; Guest et al., 2015). In a recent study, Petherick et al, (2013) found only 20% of patients with a recorded leg ulcer received compression and in a French study Begarin et al, (2014) noted that only 10.8% of general practitioners followed any form of leg ulcer guidelines for management. It, therefore, could be considered that accredited specialist leg ulcer training is necessary to implement sustainable improvements in practice.

## Nurse preparation

Guest et al, (2015) suggest that wound care should be considered as a specialist segment of healthcare and requires specialist training to diagnose and manage properly. However, evidence suggests that this is currently not the case (Guest et al, 2012; Panca et al, 2013; Guest et al, 2015). This means some nurses without specialist knowledge are often left to deal with vulnerable patients who subsequently suffer deterioration of their condition and delays in healing (Anderson, 2010). More could be done to ensure community nurses are adequately trained in leg ulcer assessment and management at postgraduate level (Patton, 2009).The consensus from research indicates patient's outcomes are superior and higher levels of evidence-based practice, leadership and change management are demonstrated when a nurse has had specific post-graduate training (EWMA, 2016; Clark et al., 2015; Dugdall and Waston, 2009). The EWMA (2016) state that nurses conducting leg ulcer assessment should have the appropriate level of anatomical and physiological knowledge. Therefore, education and training are essential in provision and delivery of care to improve patient outcomes (DOH, 2013).

## Complexities

The problem appears to stem from a lack of recognition by budget holders and managers regarding leg ulcer management and the importance of early detection which can minimise long-term costs and improve patient's quality of life. Under the current economic climate and with ongoing budgetary cuts, access to training can be limited and the gap continues to widen between standard practice and specialist knowledge (Chamanga et al., 2014; Anderson, 2010). Internal organizational training is not standardized, yet, education and training are vital in providing skilled knowledgeable practitioners, however; this is reliant on quality education (Wong, 2003; Anderson 2010). This is consistent with the findings from the pre-course questionnaire for the Nurse-Led Assessment and Management of Leg Ulcers module which identified; nurses considered the lack of time, insufficient knowledge, and practical skills to be the barrier to quality leg ulcer care in clinical practice.

## Continuous Professional Development: Creation of a new module.

To address this concern a new accredited Continuous Professional Development (CPD) module, in leg ulcer training has been developed at a London University. The purpose of this evaluation is to investigate ways in which primary care nurses changed their practice and management of venous leg ulcers, following the completion of the module. The module is rich in theoretical content pertaining to epidemiology, aetiology, classification, and assessment of leg ulcers. Practical sessions surrounding assessment, ABPI Doppler and compression bandages are carried out in a simulated learning environment to support decision making and application of theoretical concepts. Knowledge is assessed through completion of a practice-based audit, an assignment on theoretical aspects of leg ulceration and a 60-minute clinical OSCE focusing on a full holistic assessment including comprehensive

history taking and limb assessment, Doppler ABPI assessment, and application of compression bandaging in a simulated environment.

## Methods

This is a before and after educational evaluation to assess the value of leg ulcer education in influencing practice. Qualitative data was collected pre-and-post module. All 12 students consented to partaking in the evaluation and ethical approval was not required for this evaluative audit. All the nurses applied for the course independently from the community and primary care across West London and Berkshire. A questionnaire was completed by all students prior to commencing the module regarding knowledge and previous leg ulcer experience. The purpose of the questionnaire was to understand the baseline level of knowledge and prepare course material to account for the wide range of clinical experience from working in leg ulcer clinics for several years to a novice in terms of leg ulcer treatment.

Following completion of the module students were interviewed independently by the module leader with structured questions aligned to the Kirtpatrick (1994) Learning and Training Evaluation Model (Fig.1), with consideration to the level 3 and 4; the degree in which participants can apply learning to their job and the targeted outcomes that occur as a result of learning (Kirkpatrick, 1994). The students were asked if their assessment, diagnosis, and decision-making had improved following the module and the impact or change they had made in their practice. It is recognised this is a small scale evaluative study and is limited to practices in West London and Berkshire. Further longitudinal research across a wider

demographic area and additional student cohorts is required to further assess the value of leg ulcer education.

Fig.1: Training and Evaluation Model

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| Level 1 | Reaction | The what degree participants react favourably to the learning |
| Level 2 | Learning | To what degree participants acquire the intended knowledge, skills and attitudes based on their participation to the learning event |
| Level 3 | Behaviour | To what degree participants apply what they learned during training when they are back on the job |
| Level 4 | Results | To what degree targeted outcomes occur as a result of learning events and subsequent reinforcement. |

Kirtpatrick (1994)

## Results

12 Primary care nurses took part in the study and completed the pre-course questionnaire (Table 1); however, 4 withdrew prior to the post module interview. Primary care experience ranged from 1 to 38 years with 7 of the students having over 20 years' experience. Of the 12 nurses, all but 1 reported that they had attended some kind of short tissue viability or leg ulcer course previously but had not completed an accredited CPD module. Two students had no previous experience with managing leg ulcers and 10 were already carrying out treatment of ulcers to some capacity. Mostly the years of experience were concurrent with those already managing leg ulcer patients.

Table 1: Pre-Course Questionnaire

| Years Qualified | Area of leg ulcer treatment | Rationale for choosing the course | Previous CPD accredited leg ulcer or tissue viability training at level 6 | Areas in practice that could potentially be changed following the module |
|---|---|---|---|---|
| Between 1-10 = 2 | Clinic = 11 | Update date skills and knowledge = 6 | Yes = 1<br>Tissue Viability at level 6 | More knowledge on leg ulcers<br>Protocols, using best practice |
| Between 10-20 = 3 | Patients Home = 3 | Deliver treatment and best practice = 2 | No = 11 | My level of knowledge. I enjoy the challenge of healing wounds but feel my knowledge needs to be improved and updated.<br>Patient empowerment and education.<br>Dressing and treatment knowledge |
| Between 20-30 = 3 | Hospital = 1 | Improve competence and confidence = 3 | | Management<br>Organisation<br>Treatment |
| Between 30-40 = 4 | GP Practice = 2 | Improve patient experiences and leg ulcer management = 5 | | More complete rounded care. I am the only person in my practice caring for leg ulcers at the moment. This will enable me to provide more up-to-date accurate.<br>Update knowledge and skills.<br>More confidence and knowledge to deliver best practice.<br>Increased confidence in diagnosing arterial/venous leg ulcers |

Out of the 12 students, 8 nurses successfully completed the course, were interviewed, and the results were collated (Table.2). 6 of the 8 nurses interviewed were satisfied that their expectations and learning needs had been met. However, 2 of the nurses would have preferred additional Doppler and compression practice using a wider range of compression systems. All the 8 nurses interviewed commented that the module had changed and influenced their practice in some way. They all stated that they felt more confident in carrying out Doppler ABPI assessment, applying compression bandages and cited improvements in their reflection and decision making skills. Previously; some of the nurses were sending patients to clinics across the other side of London with longer than two weeks waiting lists for APBI assessment.

All of the nurses stated that their limb and medical history assessments had improved and they recognised how to apply this information to clinical diagnosis. They all commented that they would consider compression sooner and would reassess some historical wounds on the caseload that previously had not healed. The nurses stated that they felt more confident in prescribing hosiery and would consider alterative compression options rather than just bandaging. Following the module, they found that they were often called upon for a second opinion by their peers. One of the nurses had changed a number of non-concordant patients in practice from a 4-layer bandage system to alternative short stretch compression systems, which has resulted in improved compliance and healing rates. Additionally, she implemented training around alternative compression options for her peers who traditionally only applied 4-layer systems. Brooks et al., (2004) found that inappropriate choice of garment or incorrect application of compression are potential determinants of patient non-concordance. Therefore, increased nurses' skills and knowledge, patient education and ongoing prevention

and management should be considered a priority. (Ashby et al., 2014). One student commented: 'Measuring clients for hosiery, deciding what type is most beneficial for them and ongoing support is paramount to prevent re-ulceration. The way one promotes the effectiveness of compression therapy, giving a positive slant to its benefits, is also crucial in the nurse/client partnership.'

8 of the nurses commented that they had not used the audit process before in their clinical area and found this to be extremely beneficial to practice. Following the audit, all of the nurses demonstrated areas in their practice that could be changed to improve the service and patient outcomes. Of the 8 nurses, all commented that they had an increase in knowledge in the classification of venous disease and now considered prevention of chronic venous disease and early detection a high priority. The nurses stated that they particularly valued the practical sessions using a problem-based learning approach to consider more chronic, hard to heal wounds and practice their Doppler technique. All the nurses found peer sharing of protocols, practice documents, and experiences to be of great benefit to their own practice area as some had struggled previously to implement robust local guidelines, which could help in improving standardization across the NHS where necessary (O'Brien et al., 2011).

Table 2: Post course interview

| Has the module changed your practice and how? | What key aspects of the course had the most influence on your practice? |
|---|---|
| Definitely – as I am a participating member of the local Leg Ulcer Clinic, I now feel more confident and a more effective practitioner in understanding the importance of taking a thorough history, performing Doppler assessments, and prescribing the best method of treatment for the client. | The understanding that it is the compression, and not necessarily what one puts on the wound, that initiates improvement in the condition of the leg. Also, the message that hosiery is for life, once diagnosed with venous disease.<br>Measuring clients for hosiery, deciding what type is most beneficial for them and ongoing support is |

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| I would definitely recommend this course to my colleagues in the community. I have been supported by managers in leading the clinic with another colleague | paramount to prevent re-ulceration. The way one promotes the effectiveness of compression therapy, giving a positive slant to its benefits, is also crucial in the nurse/client partnership. |
| Not previously carrying out leg ulcer assessments or treated leg ulcers before. Now Confidence with Doppler assessment and ABPI calculations.<br><br>Improved confidence with decision making and treatment options.<br><br>Confidence to treat with compression bandaging after full assessment.<br><br>Shared copies of assessment sheets from other practices very useful. | The ability to now carry out clinical assessment and not to have to refer patients to hospital for assessment, ABPI.<br>No longer necessary to send patients to leg ulcer clinic for compression which has a 2 week waiting list.<br><br>Using a venous disease classification tool |
| More confidence in treating leg ulcers.<br>Started to carry out ABPI assessment on patients.<br>I would consider compression much sooner than before and am putting patients into compression much sooner.<br><br>Showed colleagues how to use short stretch bandages, always used 4 layer in the surgery before which had poor compliance. 2 patients now healed since started on short stretch.<br><br>Try using an alternative compression system on a number of patients – never heard of it before the course. | Practical sessions<br>Case studies and scenarios<br>Alternative compression systems<br>Doppler reassessment and hoisery |
| Now doing ABPI assessments – used to send patients to the leg ulcer clinic but it recently closed so patients were having to go to the acute trust across London.<br><br>More confident managing biofilms.<br><br>Using alternative debridement dressings which I did not previously know about.<br><br>Carry out more through assessments on patients i.e. blood tests; screening for diabetes; through wound assessment; underlying cause; wound management.<br><br>Would like to spend a day in a leg ulcer clinic<br><br>Helped with location and assessment of foot pulses and sound for diabetic assessments. | Compression and hosiery ordering and measurement for 3 patients.<br>Wound management – dressings<br>Information from the dressing companies |
| I was shadowing other practitioners before for leg ulcer care, ABPI assessment and compression but have carry this out myself. I have become the leg ulcer champion and run the leg ulcer clinic in my area. Previously the clinic had been run by another nurse but she has left. | Compression bandaging and Doppler assessment.<br>Treatment plans and best practice<br>CEAP classification tool |
| Refresh 1st assessments of patients.<br>Reduced threshold for non-healing wounds. Previously, it was difficult to get referrals so persevered with wounds rather that referring earlier.<br>Now recognise the need for early referral and the need for assessment. Patients referred quicker to vascular. | Doppler assessment and renewal of information<br>Limb assessment and medical history is much more through and know more how to apply this information to practice. |

| | |
|---|---|
| | More confident in prescribing hosiery and would consider hosiery as an alternative to bandage systems. |
| Clear assessment.<br>Further investigations of assessment i.e. diabetes control, meds<br><br>Audits – never completed one before. Will complete again in practice – useful evidence to inform change. | Pain – identify causes of pain.<br>Pain relief and pain assessment. |

## Key Discussion

Education and training are important to improve the quality of care and patient outcomes and leg ulcers are no exception (Wong, 2013). The Nurse led Assessment and Management of Leg Ulcer module appeared to increase primary care nurses' knowledge and skills, suggesting that nurses benefit from formal leg ulcer training to make improvements in practice. 'Formal training' is not identified in the literature but is widely considered to be a nationally recognized course. The module sought to empower nurses' clinical decision making and not only with the management of leg ulcers, but also in the underlying causes of venous disease and the use of the revised CEAP Comprehensive Classification System for Chronic Venous Disorders (Eklof et al, 2004). The module appeared to have benefited all the nurses who completed the post course interview regardless of their previous experience and knowledge level. However, existing knowledge and clinical skills were a factor in how well the OSCE was completed at the end. The nurses who had previously worked in leg ulcer care demonstrated greater confidence with decision making and diagnosis due to previous practice experiences.

The overall rationale cited by the nurses for choosing the module suggests that nurses are concerned with their lack of skills and knowledge when treating leg ulcers. Over the years, leg ulcer patients have become primarily managed by the community making up a vast proportion of the district nursing caseload (83%) (Posnett et al., 2009). If primary care nurses are to continue to deliver quality care then specialist training is essential. However, since leg ulcer management comprises of both knowledge and skills, an increase in knowledge alone cannot ensure that high quality and best practice care is delivered. Education and assessment of the practice skills are paramount to ensure safety and wound healing.

The delivery of good quality of care can no longer be assumed however, it has been recognised that nurses sometimes find it difficult to implement guidelines (Hindley, 2014). The use of clinical audits in practice are an effective tool to inform and benchmark practice against national and international standards (Hindley, 2014). The nurses found the use of audit within the module invaluable in terms of assessing current practice, service provision and providing a rationale for change (Hopkins, 2010). Auditing a practice area before change can help to identify need, motivate staff and sustain the change if outcomes are fed back to the appropriate teams (Hindley, 2014). Furthermore, the literature suggests that improved education and training in wound care leads to better outcomes for patients and improved record keeping amongst Healthcare professionals (EWMA, 2016; Lagerin et al., 2007

## Summary

Continuous education is a prerequisite in nursing to ensure standards are met, maintained and patients are placed at the centre of their care. This evaluation investigated practice-based leg ulcer education and its value in informing recommendations for change in practice.

It was evident that all nurses who completed the final interview had made changes in their own clinical practice and the practice environment. Misdiagnosis and incorrect treatment are often the reason leg ulcers fail to heal. Results from this evaluation indicate an improvement in patient and service outcomes, increased skills, knowledge, and competence of primary care staff and recognition of areas for development and improvement in the future. However, it is recognised that an academic module is not exhaustive and nurses are required to continuously learn and develop within specialist fields.

## Key Points (5 key points about the article)

- Patients who present with leg ulcers have the right to be treated by clinically competent staff who follow best practice guidance. Literature suggests that currently, leg ulcer practice is falling short of recommended national guidelines.
- Evidence suggests that early diagnosis and treatment of venous leg ulcers significantly improves healing outcomes, reduces the financial burden and improves patient's quality of life. Additionally, preventative care and early detection of venous disease using the CEAP classification tool could significantly reduce the burden of wound care on community practitioners.
- Staff have identified a lack of knowledge and skills with regards to leg ulcer management. Accredited leg ulcer education is vital to equip staff with the knowledge, skills, and competencies to deliver evidence-based care.
- Following an audit process which allowed nurses to benchmark current practice against national and international guidelines, nurses felt able to provide robust sustainable rationales for implementing change.
- Specialist trained nurses act as a support and resource in clinical practice to ensure best quality care is provided.

## CPD Reflective Questions (3 reflective questions)

- How do you feel about your current leg ulcer practice? Does it meet with national standards around assessment, treatment, and reassessment?
- Reflect on your clinical practice can you identify with the nurse's experience's prior to completing the leg ulcer module? What are the current barriers to best practice in your clinical area? Are there any changes that could be made to improve practice? When was the last time a leg ulcer audit was completed in your practice area? Use a reflective cycle to guide this reflection and link it to one of the NMC's four P's for revalidation (NMC, 2017).
- After reading this article, use a SWOT analysis to identify your strengths and weakness in leg ulcer assessment, management and treatment and identify an action plan to improve any areas of weakness.

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