

Patient education pictorial boards: improving patients' understanding of venous leg ulcer and compression therapy

KEY WORDS

- ▶ Patient Education
- ▶ Pictorial Information Boards
- ▶ Venous Leg Ulcers (VLUs)
- ▶ Wound management

A major problem among patients with venous leg ulcers (VLUs) is adherence to compression therapy. It is therefore essential that patients understand their condition and how compression works as without this treatment the ulcer is unlikely to heal. As a Tissue Viability service wanting to improve our VLU patient education we decided to engage with our patients to understand their current knowledge of their VLU condition and how compression therapy works, to understand their own words for leg ulcer terminology, and to ask them how they prefer to learn and receive this information. From this work, the VLU Education Boards were developed using colourful visual pictorial images of inside the leg, with simply written terminology chosen by our patients to be used alongside verbal explanation. Evaluation post-education with the boards showed improvement in patient knowledge of their condition and treatment. Nurses also felt more confident in their explanation of the VLU diagnosis and how compression treatment works.

Venous leg ulcers (VLUs) are the most common chronic wounds in the UK and the most common cause of lower limb ulceration with prevalence estimated to be 1% in the adult population and reported to be as high as 3% in adults over 65 years of age (Donnelly, 2009). In the Burden of Wounds study, there were 278,000 patients with VLUs in the study period, equating to 1 in 170 adults having a VLU (Guest et al, 2015). VLUs are caused by chronic venous insufficiency where damage to the valves within the vein occurs (Bainbridge, 2013; Harding et al, 2015; Guest et al, 2017). Damaged valves prevent the blood returning to the heart properly causing the blood to flow backwards increasing the pressure (venous hypertension) in the superficial veins. Raised venous pressure may then cause swelling of the leg, and increased fragility of the blood capillaries and the skin, increasing the risk of ulceration (Harding et al, 2015).

Both the treatment and prevention of venous ulcers aims to reduce the pressure in the veins. This can be achieved with compression in conjunction with surgical treatment such as venous ablation (Cullum et al, 2001; O'Meara et al, 2012; Nelson and

Bell-Syer, 2014; Gohel et al, 2018). Compression aims to reverse the effects of venous hypertension and aid venous return of this chronic long-term condition (European Wound Management Association, 2016).

A major problem among patients suffering from chronic diseases, such as chronic venous insufficiency is compliance with long term regimens (Van Hecke et al, 2008). Without compression treatment, VLUs are unlikely to heal and highly likely to recur. As non-concordance in patients with VLU occurs frequently (Ertl, 1992; Jull et al, 2004) it is essential that patients understand their condition and how the compression treatment works and also that patient education is delivered in a clear collaborative way to empower patients to make informed choices about their care.

As a Tissue Viability Service looking at improving our VLU patient education we decided to engage with our leg ulcer patients to understand their current knowledge of their VLU condition and how compression therapy works, to understand their own words for leg ulcer terminology, and to ask them how they prefer to learn and receive this information.

CAROLINE CLARKE
Tissue Viability Specialist Nurse,
Midland Partnership NHS
Foundation Trust, Bradwell
Hospital, Newcastle-under-Lyme

LYNN WHITMORE
Tissue Viability Clinical
Educator, Midland Partnership
NHS Foundation Trust

AMY WEBB
Community Clinic Nurse,
Midland Partnership NHS
Foundation Trust

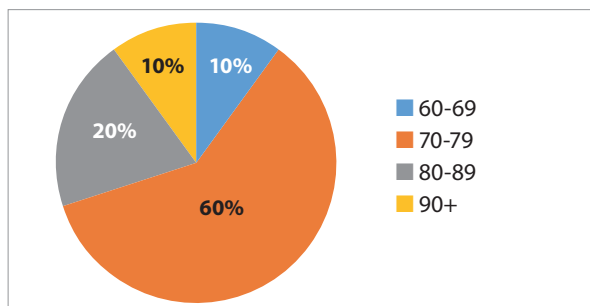


Figure 1. Age of patients being interviewed at the engagement event in December 2018

KNOWLEDGE AND UNDERSTANDING

The literature indicates that patients’ with VLUs do not always have sufficient knowledge of the pathophysiology of their condition and treatment (Persoon et al, 2004; Heinen et al, 2004; Finlayson et al, 2010). It also cites a lack

of patient knowledge of treatment as a reason for non-adherence (Edwards et al, 2002; Finlayson et al, 2010; Van Hecke et al, 2011a). Without the delivery of clear information, patients may choose not to adhere to the treatment plan suggested and some may be labelled as non-concordant when in reality they may have not received effective information or truly understand their condition and treatment. One reason given for patients’ knowledge deficit is lack of education by professionals during the delivery of care, due to a lack of up-to-date information and appropriate time resources to provide the required education (Heine et al, 2007). Sometimes information is given to the patient without the patient being involved in a discussion about the rationale (Van Hecke, 2011b).

CONCORDANCE WITH COMPRESSION

A systematic review found that patient adherence to compression therapy varies widely between 10% and 80% (Van Hecke et al, 2008). Findings suggest that non-adherence to compression therapy is associated with delayed wound healing and equates to a 2 to 20-fold increase in reoccurrence (Moffatt et al, 2009). Their study reviewed the reasons why patients do not concord with compression highlighting physical, aesthetic and cosmetic factors, lack of patient education, cost of therapy and issues with treatment by clinicians. Other systematic reviews have similarly highlighted that adherence to leg ulcer treatment is influenced by many factors (Van Hecke et al, 2009; Hughes and Green, 2019).

Improving the delivery of both education and patient understanding of their VLU condition and treatment could positively enhance patient adherence to compression therapy; however, in view of the complex multifaceted factors influencing

concordance with compression it would need to be considered as part of a holistic approach (Hughes and Green, 2019). Currently, there is also a lack of evidence to support or refute the benefits of educational interventions to improve concordance and which is the best educational strategy to use with patients (Weller et al, 2016) and an ongoing study is currently looking at this (Probst et al, 2019).

The author’s Trust also recognised that patients’ knowledge and understanding of their VLUs varied. Information was delivered in the main verbally, with some using written information and some drawing pictures to explain what was happening inside the leg. It was thought that the level and strategies used could vary with the knowledge and experience of the nurse delivering the education. A consideration for any clinician involved in delivering patient education should be: do patients understand the information we deliver? And how do patients receive information best? This could vary depending on the patients preferred learning style, how the information is delivered and whether the terminology used is understood. Working with our patients to develop an education tool was one of a number of strategies undertake to improve education to our VLU patients. This was undertaken to improve our patients understanding of their condition and treatment, whilst supporting our nurses to deliver consistent information.

METHOD

A patient questionnaire was developed which included pictures of venous skin changes to collect information regarding patients’ knowledge of their condition and treatment as well as how they remembered information best. A clinical staff questionnaire was also developed to determine their confidence levels in delivering patient education. In December 2018, we had our first patient engagement event in one of our clinic areas. Patients with VLUs were invited to attend the drop-in day event. At this event, the Tissue Viability Team interviewed ten patients who were being treated for a VLU, all were over 60 years of age (Figure 1). We asked if they had access to the internet, smartphone, Facebook account, Laptop, computer or tablet — 58% had access to none of these, 8% had access to the internet, 17% had a phone and 17% a laptop, computer or tablet. This supported the need for a

DECLARATION
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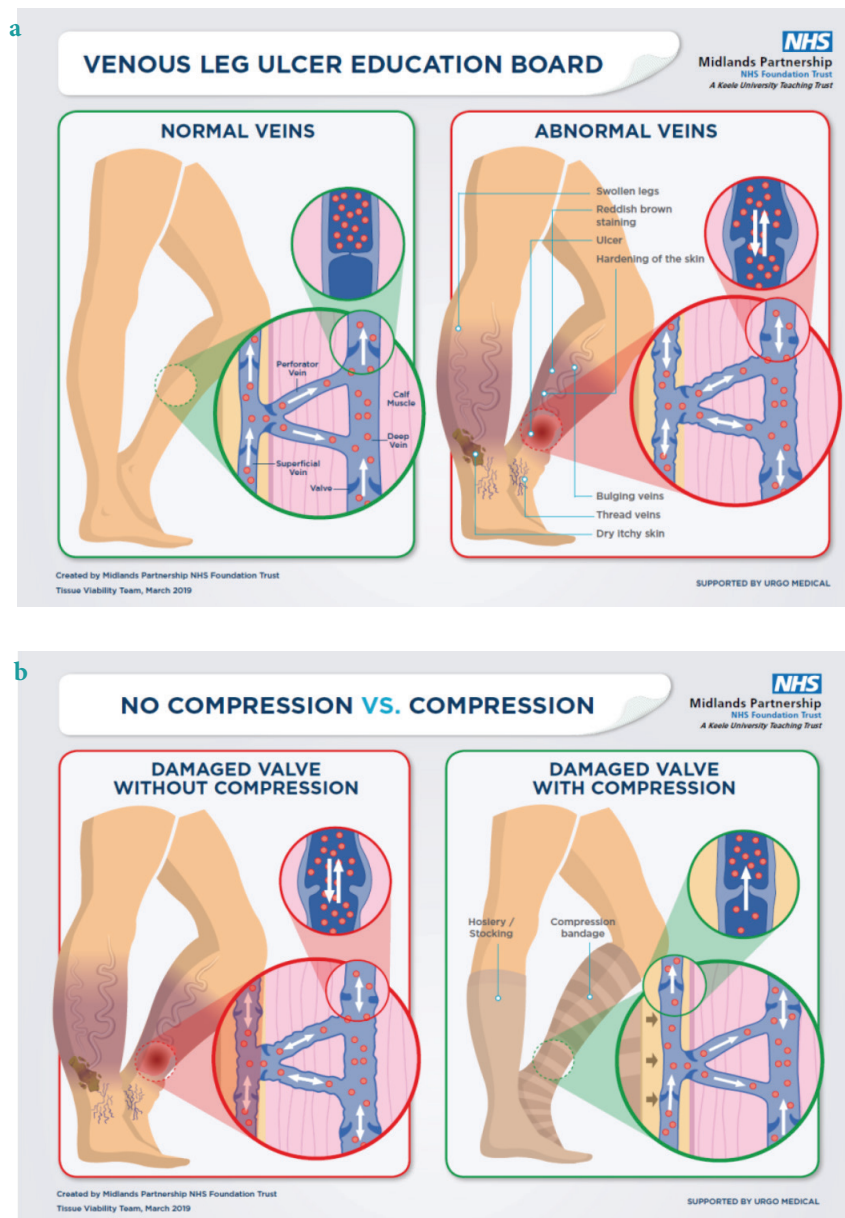


Figure 2. The patient education board images: front (a) and back (b)

resource that did not rely on modern technology.

Following the event and utilising the patient preferred terminology, patient education board images were developed (Figure 2a and b). This supported patients' favoured learning styles, with 40% saying they preferred pictures, 40% speech and 20% writing.

The primary aim was to help patients to understand the underlying cause of their VLUs, and the differences between wearing and not wearing the prescribed compression. The secondary aim was to provide equity of information being given to the patients whilst improving the generalist clinician's confidence for those explanations.

A second engagement event took place in April 2019, when the ten patients were invited back for education using the boards and interviewed post-education. Five patients (50%) attended and, following education with the board, they were asked about why people might get a VLU and how compression works, about their understanding of VLU terminology and what difference the boards had made to their understanding.

To gather further data, another pilot was commenced within the clinic setting. Clinic nurses were trained to deliver VLU education using the board images. They then captured 20 patients' knowledge before educating them with the VLU boards and afterwards to gauge if their knowledge and understanding had improved. This also allowed us to collect some data on the patients under 60 years of age (although these numbers were small). Of the 20 patients, 15% were in the 40–60 year age groups and 85% with being over the age of 60 years. Sixteen out of the 20 were either retired or semi-retired.

RESULTS

The initial patient data analysis suggests that the boards have improved both patient knowledge of both their condition and treatment prescribed. When asked how much knowledge they felt they had about why people might get a VLU, ten of the 20 patients (50%) said they had some knowledge (Figure 3). This had increased to 19 out of 20 (90%) after education with the boards (Figures 4).

When asked how much knowledge they felt they had about how compression works 11 (55%) said they had no knowledge pre-education with the board (Figure 5), this had decreased to 1 (10%) post-education with the boards (Figure 6).

Currently, all of the patients asked have stated that having sight of the education board at their first assessment would have helped provide a deeper understanding of their condition and the treatment required. Comments include: 'seeing the picture form diagrams has really helped a lot particularly the valves, veins and blood flow', 'I understand how the veins work properly', 'using the boards has given me knowledge and understanding of my treatment and management', 'able to see the difference clearly'

Nursing staff in the clinic area were asked how confident they felt in explaining the VLU diagnosis

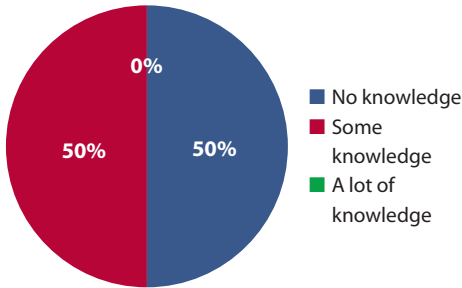


Figure 3. Why might people get a VLU?
Results before education with the board

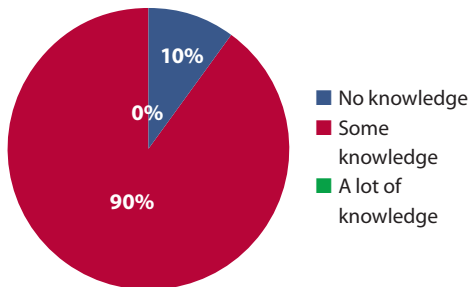


Figure 4. Why might people get a VLU?
Results after education with the board

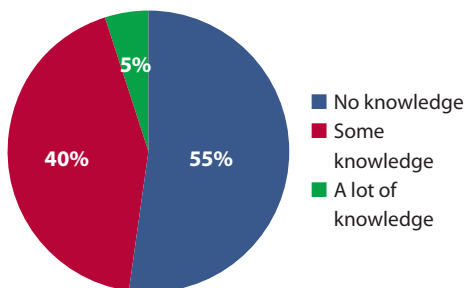


Figure 5. How does compression work?
Results before education with the board

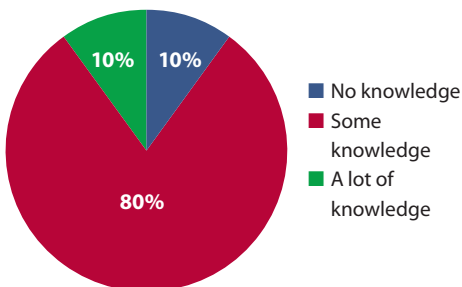


Figure 6. How does compression work?
Results after education with the board

including what venous hypertension is and how compression works to reduce venous hypertension to patients and carers; both before and after having education with and using the board. Prior to using the board, they all stated that they were fairly confident but no one felt confident in their explanation, this had increased to 50% feeling confident with the use of the board (Figure 7).

When asked about confidence when explaining how compression works to patients, 100% felt fairly confident prior to using the board but after using the board this had increased to 84% feeling confident and 16% fairly confident (Figure 8).

All agreed that using the boards as a visual aid helped support their explanations. Comments received included ‘visual aid helps the patient understand better’, ‘Having a diagram to show the patients helps with their understanding of the valves’, ‘Patients are able to visualise what is happening inside their leg’ ‘clear pictures of how compression works’ and ‘using the board has given me more knowledge.’

DISCUSSION

As far as we are aware this is the first attempt to develop pictorial board images to improve VLU information delivery. We could find no other published work that had developed and used a pictorial information tool, alongside verbal explanation and simply written terminology to improve VLU education.

Our research into the literature found there was scant evidence available to assess the benefits of specific educational interventions, i.e. video compared with written information to improve patient

benefits of educational interventions generally (Weller et al, 2016).

In our small pilot patients were mainly over the age of 60 most with limited access to modern technology. As the boards do not require access to the internet or phone they are an ideal tool for this client group. They are also durable, light-weight and infection control friendly which is needed when using within a clinical environment.

Our small pilot suggests that using a pictorial patient information board tool has helped improve in most patients their knowledge of the underlying cause of their venous ulcer and how compression works. In one case there was no improvement in knowledge before and after using the boards. This was thought to be due to this patient having a memory impairment diagnosis. Short term memory was observed to be an issue when undertaking the engagement events even when patients had not got a diagnosis of memory problems. Memory problems are documented to be more prevalent as we age. Research suggests 1 or 2 in every 10 people over 65 may have mild cognitive impairment (Alzheimer’s Research UK, 2019) and based on 2017/18 data 537,097 people in the UK had a dementia diagnosis (Alzheimer’s Research UK, Dementia Statistics Hub, 2019). This highlights a potential barrier when delivering information to this client group and the importance of involving family and carers when delivering education. The fact that the boards can be easily be brought out at future appointments to reinforce and go over the information again would be beneficial for this client group.

We observed that no patients felt they had ‘a lot of knowledge’ about their condition even after having education with the board. This may be because patients do not perceive themselves to be experts in their condition and still see the health care professional as the one with ‘a lot of knowledge’ and the need for us to ensure our patient education is delivered early to make patient experts in their chronic condition including how to facilitate long-term self-care. This should take place as soon as the patient develops signs of venous disease before skin breakdown and a VLU occurs. Unfortunately, this does not take place in our area currently but there is a drive nationally towards prevention in the NHS (2019) and also in raising awareness about leg problems and the importance of managing these

knowledge of venous disease and ulcer management of patients with an active VLU (Baquerrizo et al, 2015) and no evidence to support or refute the

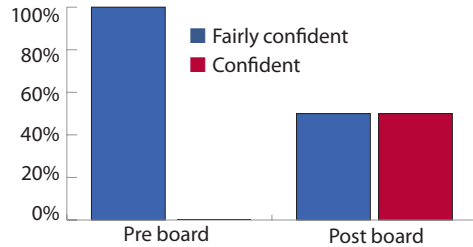


Figure 7. Nursing staff's confidence in explaining the VLU diagnosis pre and post education with the board

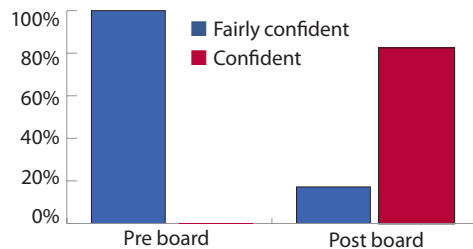


Figure 8. Nursing staff's confidence in explaining compression pre- and post-education with the board



Figure 9. A Patient Education Board video will be used to train community staff

problems early through the provision of information to patients, family, friends and health professionals via the national Legs Matter campaign (Legs Matter, 2019). With regards to understanding how compression works the number of patients with some knowledge or a lot of knowledge had increased from 45% to 90%. Demonstrating the visual pictures did make a difference, but again the number who said they had a lot of knowledge post-board was small (10%).

Following training and using the education boards with patients, nurses' confidence in explaining both the underlying cause of the venous ulcer and how compression works had also increased. With

regards to explaining about the underlying cause of a venous ulcer 50% of the nurses had moved from feeling fairly confident to confident and in terms of explaining how compression works 84% of the nurses had moved from feeling fairly confident to confident. A 5-point rating scale rather than a choice of 3 responses to questions on both the patient and staff questionnaire may have been more sensitive in showing improvements from 'some knowledge' to 'a lot of knowledge' and 'fairly confident' to 'confident'.

The data was not able to evidence the impact of the boards on patient's adherence to treatment but we hope to be able to collect more data as we roll the boards out to all the clinics in the Trust.

CONCLUSION

Overall using patient education pictorial boards to support delivery of patient education has improved patient knowledge of both their VLU condition and how compression therapy works as well as the nurse's confidence in delivering the education. The boards have been positively received by both patients and nursing staff.

With such positive initial outcomes, the boards are to be implemented into all our clinic areas within the Trust, with the prints on durable, tear-proof synaps paper media for community nurses and paper copies which can be given to patients following explanations. A video demonstrating using the boards to provide education to one of our leg ulcer patients has also been made. This will be used to quickly train all our community nursing staff (Figure 9).

Our next step, as we launch the boards within the Trust, is to commence a competition open to all community nurses who are able to evidence via patient case studies how using the boards and images to improve patient education of their VLU condition and compression treatment have led to an advancement in adherence to compression therapy and ultimately better ulcer healing. WUK

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