A survey of nurses' and podiatrists' attitudes, skills and knowledge of lower extremity wound care

Published literature has identified deficits in the wound care knowledge of many healthcare professionals involved in tissue viability, which may suggest some patients are receiving suboptimal care. This article explores podiatrists' and nurses' attitudes, knowledge and skills regarding lower extremity wound care. Interactive electronic voting pads were used to survey a sample of nurses and podiatrists (n=102). The results were used to inform the delivery of wound care education at the Unversity of Huddersfield in order to encourage future collaboration and foster better working relationships between nurses and podatrists.

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KEY WORDS
Nurses
Podiatrists
Attitudes/knowledge/skills
Wound care
Multiprofessional

Wound care represents a significant proportion of healthcare resources and makes up a substantial amount of contact time within clinicians' daily schedules. Traditionally wound care has been mainly the responsibility of the nurse. Indeed it is estimated that community-based nurses spend 25–50% of their time treating wounds (Bale, 2004). However, nurses are not the only healthcare professionals who care for lower extremity wounds — the extended role of podiatrists encompasses wound care, particularly in the management of diabetic foot ulceration.

Evidence suggests that some healthcare practitioners involved in wound care have received insufficient training and possess poor knowledge of this area. A search of electronic medical databases (Pubmed, CINAHL, Scopus) and a manual search of British podiatry journals and British wound care journals which are not all included on online medical indexes revealed no published data to assess podiatrists' knowledge and training needs in diabetic foot disease or indeed other aspects of tissue viability. However, more generally, the published data do identify a deficit in wound care knowledge for healthcare professionals and generic healthcare workers (Lloyd-Jones and Young, 2005). Studies are therefore warranted to identify podiatrists' level of knowledge and training needs in wound care to minimise the risk of patients receiving ineffective and sub-optimal management. Furthermore, multiprofessional working is an essential prerequisite for optimum patient care so it is important to establish attitudes and current practice in collaborative working between podiatrists and nurses.

A large survey (n=692) of nurses' wound care knowledge undertaken in the USA and Canadian provinces identified nurses' perceptions of whether their basic nursing education was sufficient (Ayello et al, 2005). Overall findings suggested 70% of nurses felt they did not receive sufficient education on chronic wounds in their basic nurse training. However, disparities were identified between less experienced nurses and those with more experience in terms of years and qualifications. Less experienced nurses were more satisfied with the level of wound care in their initial training (50%) when compared with the more experienced nurses (20%). Either wound care education had generally improved or, as the authors' suggest, less experienced staff are not aware of the flaws in their education until they have gained real world experience. It is unclear, from published data, whether or not this reflects wound care education in the UK, thus highlighting the need for further investigation.

In a study that was specific to diabetic foot ulcer management, a questionnaire was distributed to evaluate the quality of primary care provision of diabetes services within a health authority in north-east England (Mitchell et al, 2000). A postal questionnaire was distributed to all GPs and community nurses with a response rate of 25% and 60% respectively. Although two of the authors were podiatrists this professional group was not included in the sample population. The survey identified inconsistencies in approaches to diabetic foot ulcer care between community and specialist diabetic foot centres. Surprisingly, pressure relief, an established evidence-based

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Table 1
Baseline demographics (n=102)

Sex	Women	80%
	Men	20%
Profession	Podiatrists	46%
	Nurses	46%
	Other	8%
Years of experience	The majority of respondents had been registered for over 20 years (Figure 1).	
Working location	Primary care	74%
	Secondary care	20%
	Nursing homes	2%
	Private sector	4%

method of treatment in healing neuropathic foot ulcers (Armstrong et al, 2005) was not considered by any of the GPs or nurses in the study. Furthermore, Mitchell et al (2000) found that 20% of GPs would never recommend debridement of calluses even though the therapeutic benefit of sharp debridement is well established in diabetes care (Young et al, 1992; Murray et al, 1996).

Mackie (2006) undertook an audit of knowledge of diabetic foot disease and the information needs of district and community staff nurses in an NHS setting. The majority of respondents (n=27) identified a need for training in assessment (100%) and treatment of the diabetic foot (90%). This concurs with the findings of a survey which aimed to identify the educational needs of nurses involved in wound care by determining areas of deficiency and proficiency in education and practice (Edwards et al, 2005). With regards to the diabetic foot, 35% of nurses had only minimal knowledge of the subject despite the fact that 85% of the nurses questioned were involved in managing diabetic foot disease. This clearly identified an urgent need for further training on the management of diabetic foot disease.

Aims and objectives

This survey was designed with two clear objectives:

1. To explore podiatrists' and nurses' attitudes, knowledge and skills in lower extremity wound care
2. To identify the training needs of participants in order to inform future wound care education provision at the University of Huddersfield, West Yorkshire, UK.

Methods

Ethical approval was sought and granted from the School of Human and Health Sciences School Research ethics panel, University of Huddersfield. Informed written consent was obtained from all participants before their participation in the survey. The identities of all participants remained anonymous throughout.

Participants (n=102) were selected, using incidental sampling, from delegates attending a one-day lower extremity wounds conference held at the University of Huddersfield in September 2007. Incidental sampling is the cheapest and easiest sampling method to use. It involves the selection of easily accessible members of the target population. However, care must be taken in that the results may not be representative of the total population and may present a biased view of the data collected (Polgar and Thomas, 2000). The conference primarily targeted nurses (n=47) and podiatrists (n=47) (with eight participants from other health professions) who were all involved in the assessment and management of lower extremity wounds. All course participants were invited to take part in the survey and they signed a written consent form and were able to withdraw from the survey at any time.

Data were collected using electronic voting pads (Qwizdom, Belfast). Questions were posed via PowerPoint presentations and delegates were asked to respond via remote handsets. Questions were designed to enable a survey of nurses' and podiatrists' attitudes, knowledge and skills concerning lower extremity wound care. Data were analysed using descriptive statistics within Microsoft Excel.

Results

The 102 participants' demographic details are listed in *Table 1*.

Length of registration

Generally the length of registration from all respondents was evenly spread with participants reporting length of registration as: 0–5 years (19%), 6–10 years (18%), 11–15 years (12%), 16–20 years (12%), 20 years+ (39%). However, there was some variation between nurses and podiatrists. In general more nurses had been qualified for 20 years or longer (52%) than the podiatry group (26%) (*Figure 1*).

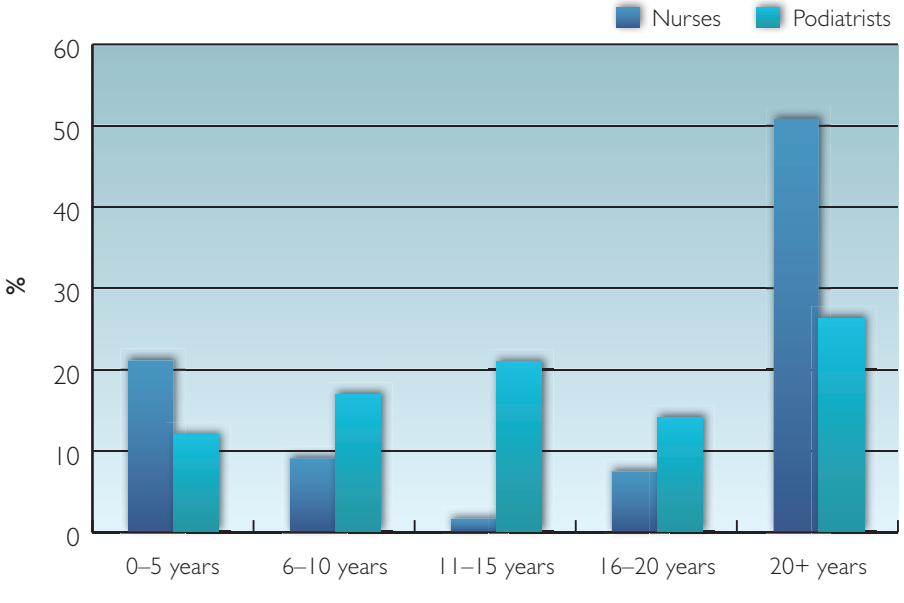

Figure 1. Length of registration by profession.

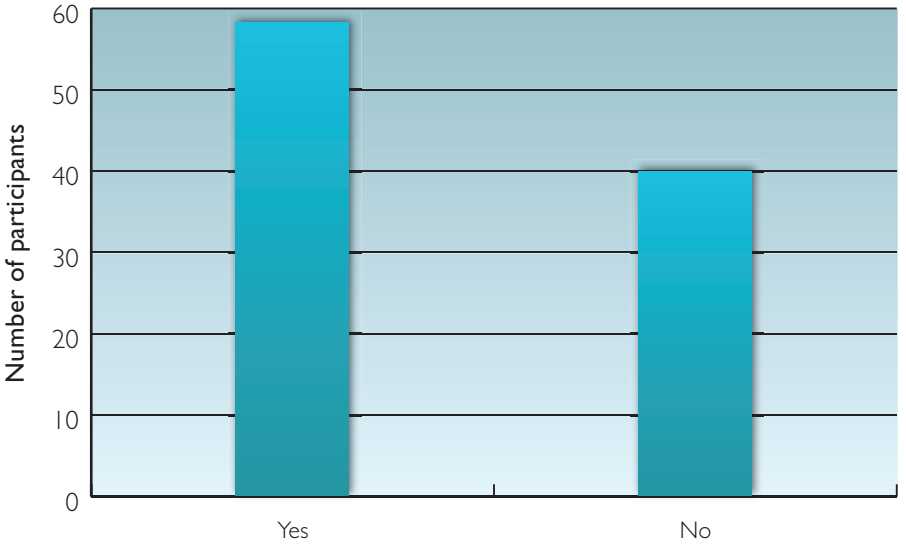

Figure 2. Do barriers exist to collaborative working between nurses and podiatrists?

Attitudes

To explore nurses and podiatrists' attitudes to multiprofessional team working the following questions were posed:

1. When managing wounds do you work within a multiprofessional team? Positively, 73% of respondents reported working within multiprofessional teams. Only 9% of nurses reported working within a team solely consisting of nurses but 19% of podiatrists reported that they manage wounds within a team exclusively consisting of podiatrists. This is despite evidence-based national guidelines advocating multiprofessional teamwork in this area (Meltzer et al, 2002; Gottrup, 2004; NICE, 2004; Boulton et al, 2005).

2. In terms of wound care how often do you refer to nursing/podiatry? Despite the fact collaborative working between nurses and podiatrists is vital in lower extremity wound care, 3% of respondents claimed they would never refer to podiatry/nurses (one podiatrist and two nurses), 55% reported that they would occasionally refer patients, 31% would often make a referral while, surprisingly, only 11% of the respondents would always involve the other discipline. As podiatry is a specialist service the authors would expect specialist nurses to refer to podiatry. It is important that all nurses are aware of specialist services available to ensure the best available care is offered to individuals who have sustained a wound.

3. Do you feel that barriers exist that prevent multiprofessional working between nurses and podiatrists?
Alarmingly 58% of respondents perceived that barriers do exist, while 42% feel they do not (*Figure 2*).

4. Barriers to collaborative working Participants were asked to rank the barriers to collaborative practice from a choice of:

- Communication
- Lack of awareness of each other's roles
- Inadequate exposure to interprofessional education at undergraduate or postgraduate level
- Professional stereotyping
- Professional identity.

The majority of responses inferred that communication problems remain the greatest barrier to collaborative working (45%). Of those surveyed, 28% reported a lack of awareness of each other's roles; 12% felt that inadequate exposure to interprofessional education at undergraduate or postgraduate level was the greatest problem, while 7% felt that professional stereotyping was the biggest barrier, and 5% felt that professional identity plays a role. Professional identify can be an issue in clinical practice whereby health professionals perceive aspects of care to be within their professional role and are therefore reluctant to involve other disciplines (Xyrichis and Lowton, 2007). In wound care this could be a potential barrier to multiprofessional working particularly when roles overlap. Only 2% felt that inconsistent educational strategies were the biggest problem.

Knowledge

To assess the participants' knowledge in lower extremity wound care the following questions were posed:

1. How would you rate your current level of wound care knowledge? In general respondents self ratings varied with 4% claiming to have excellent knowledge (all nurses). Twenty six per cent of participants felt they possessed good knowledge; 44% a satisfactory knowledge, 23% a fair knowledge while 3% felt they had poor knowledge. Data were analysed according to profession and findings were similar for both nurses and podiatrists (*Figure 3*).

2. What is the highest level of qualification in wound care? The highest level of qualification in wound care among the respondents was reported to be master's level (1%; a podiatrist), 15% had a qualification at BSc level while 7% were qualified to diploma level. Interestingly 77% of respondents reported continuous professional development (CPD) activities as their highest level of qualifications in wound care. Data were analysed to determine whether any differences were reported across the professions. The main differences between the qualification levels of the participants were that podiatrists were educated to degree level whereas the nurses stated that their highest qualification was that of a diploma. It has to be remembered that preregistration nurses can study at either degree or diploma level pre-registration and at present there are more diploma places available and this may account for the disparity between the professions' qualifications.

Data were examined for trends between perceived knowledge in wound care and level of qualification

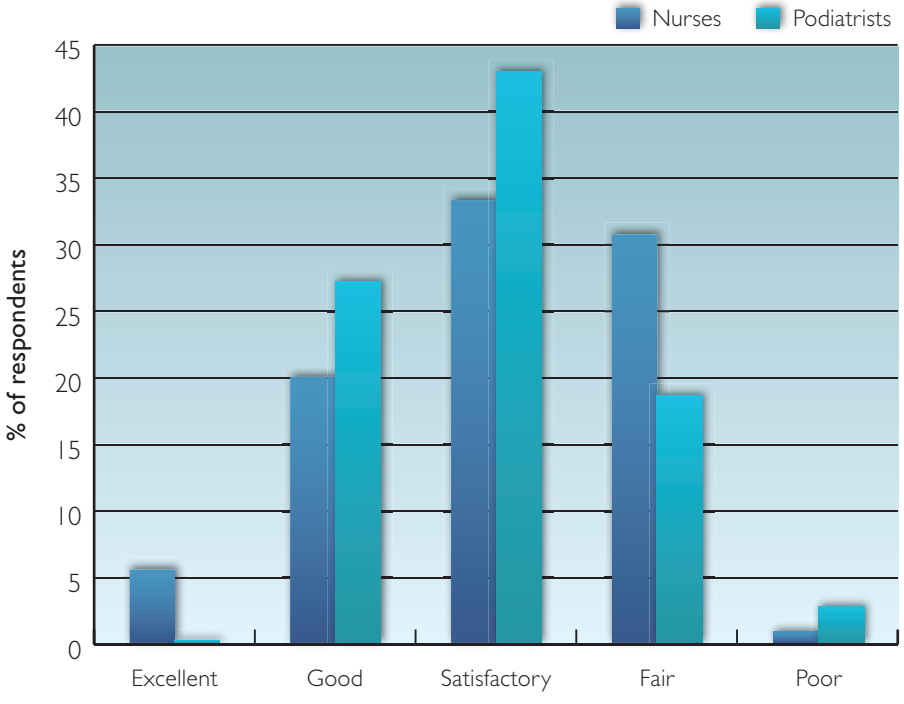

Figure 3. Nurses and podiatrists self-rating of their wound care knowledge.

in this area. The majority of those who believed they had a good knowledge in wound care had only CPD-level training, such as study days, postregistration modules or attendance at conferences (n=19). The individual who possessed an MSc ranked themselves as having satisfactory knowledge, while six individuals with a degree-level qualification rated their knowledge as good. Interestingly the four individuals who ranked their knowledge as excellent were qualified to CPD (n=2) or diploma level (n=2). This may be that the participants believe that they possess excellent day-to-day working experience and as such their underpinning knowledge is also viewed as being excellent.

3. How have you maintained your wound care knowledge to date? The respondents were asked to rank various methods in order of importance. The majority of respondents (52%) identified that they maintained their knowledge base via CPD activities with 28% relying on colleagues. Thirteen per cent of respondents stated that journals were their main source of information. Only 5% accessed university courses and 2% said that books were the most important way that they maintained their knowledge. Caution must be given to reliance on colleagues for updating the knowledge base. Staff may not possess the most up-to-date evidence-based knowledge and skills. Generally findings were similar across both professions; however, no podiatrists in this sample accessed university courses or books to maintain their wound care knowledge, with more podiatrists accessing journals. This could be attributed to the fact that more of the podiatry participants possessed degree-level training.

Skills

The final section of the survey sought to identify the application of knowledge into clinical practice. The questions posed here were not designed to test right or wrong answers but rather to see the different approaches to wound care and whether there were different opinions between the professions.

1. What type of wound do you treat most often? Unsurprisingly, there were definite trends across the professions as to the most commonly treated wounds. Nurses predominantly managed leg ulcers (46%), pressure ulcers (40%) and surgical wounds (12%), with only 2% involved with the management of diabetic foot ulcers and none of the nurses surveyed managed rheumatoid foot ulcers. In an ideal world, patients with rheumatoid foot ulcers require specialised care but in reality there are very few specialist foot ulcer clinics. Generally patients with this type of foot ulcer are seen in community clinics. The authors therefore expected community nurses to treat some of these patients.

As expected, podiatrists predominantly managed diabetic foot ulcers (76%), 8% of participants mainly managed rheumatoid foot ulcers; 8% said pressure ulcers, while 6% said surgical wounds and 2% leg ulcers.

2. Which healing phase is commonly protracted in chronic wounds? The majority of respondents answered correctly with 73% reporting the inflammatory phase of healing. However, it was apparent there were some discrepancies in knowledge; 20% claimed the proliferative phase, 6% maturation and 1% haemostasis.

3. When would you cleanse a wound? Again, differences of opinion were apparent across the respondents. The majority (48%) would cleanse a wound at every dressing change; 44% claimed they would only cleanse a wound when it is dirty, 2% reported at every second dressing change while 6% reported none of the above.

4. Participants were presented with *Figure 4* and advised that this ulcer had occurred on a patient with diabetes due to sustained pressure. They were then asked whether they would manage this wound as a diabetic foot ulcer or a pressure ulcer. This question was asked to explore whether or not professional groups would treat a wound differently and therefore follow different professional guidelines. This question was designed to explore whether there were differences in opinion regarding identifying the type of wound which could impact on care given and multiprofessional working. The majority of participants reported that they would manage this wound as a diabetic foot ulcer (64%) while 36% said they would manage it as a pressure ulcer. Data were analysed separately across the professions to determine

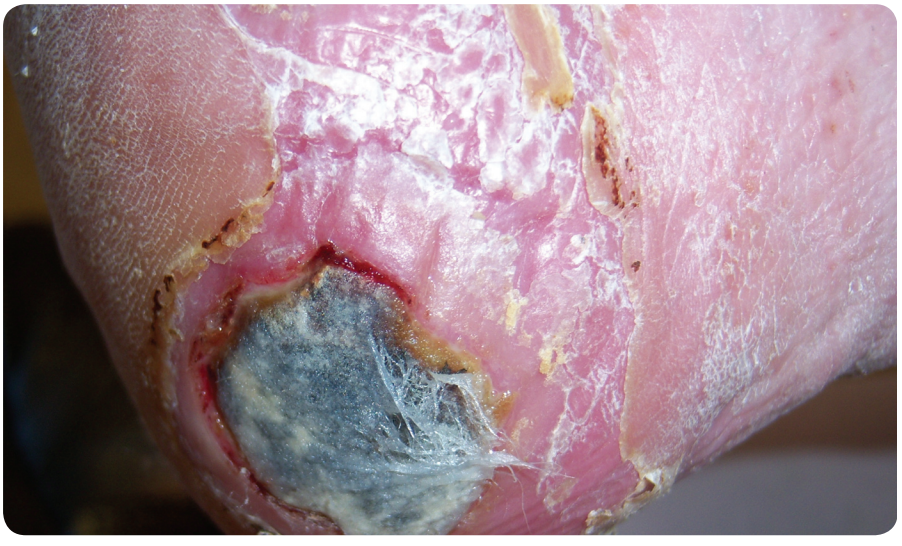

Figure 4. A heel ulcer on a patient with diabetes.

whether professional background might influence this decision. Nurses were generally of mixed opinion with 46% claiming they would manage this wound as a pressure ulcer and 54% as a diabetic foot ulcer. There was a general consensus across the podiatrists that this wound would be managed as a diabetic foot ulcer (85%) with the minority (15%) providing pressure ulcer care.

5. Do you provide offloading as standard for diabetic foot ulcers? Offloading is an an established evidence-based management strategy in the treatment of diabetic foot ulcers, particularly neuropathic foot ulcers (Armstrong et al, 2005), yet only 57% of respondents would, as standard, offload diabetic foot ulcers and 44% reported they would not, as standard, offload. Data were analysed to determine any differences across the professions. Nurses were less likely to instigate offloading with only 55% claiming they would offer this as a management option, while 79% of podiatrists would offload as standard.

Discussion

Wound care is an ever evolving multiprofessional area of healthcare. As a result it can prove difficult for the non-specialist healthcare professional involved in wound care to stay abreast of current devlopments. This survey has highlighted that the majority of nurses and podiatrists who participated in the study retain and update their wound care knowledge via CPD and discussion with colleagues. The minority accessed accredited university courses and very few held a degree-level qualification in their recognised profession. A few nurses (4%) proclaimed to have excellent wound care knowledge despite the fact that their highest qualification in this speciality was at CPD level. The podiatry respondents generally held higher academic qualifications (MSc level or BSc level) and those with degree-level qualifications largely rated their own wound care knowledge as satisfactory.

This finding conflicts with that of Ayello et al (2005) who conducted a survey of nurses' wound care knowledge primarily in Canadian provinces. Their findings suggest that nurses who were less experienced were happy with their level of wound care education on their basic education programme while more experienced nurses were less satisfied. It is suggested that this disparity may be due to less experienced staff 'not knowing what they do not know' until they gain real world experience. However, our findings could suggest that some practitioners are unaware of gaps in their knowledge because their post-registration level of wound care education is insufficient.

Furthermore it is apparent that respondents felt that barriers exist that prevent multiprofessional collaboration between nurses and podiatrists. Poor communication, lack of awareness of each other's roles and no exposure to multiprofessional learning at undergraduate or postgraduate level were reported by both nurses and podiatrists as the main barriers. These findings generally support those of Xyrichis and Lowton (2007) who conducted a comprehensive search of the literature pertaining to issues which foster or prevent interprofessional team working. Clearly there is a need to break down these barriers and foster better working relationships between nurses and podiatrists. This could partly be achieved by introducing greater multiprofessional learning opportunities both within accredited university courses and at CPD level.

With regards to knowledge and skills in wound care there were some inconsistencies across the respondents which if translated into clinical practice could impact on patient care and, in some instances, result in the patient receiving suboptimal treatment. Consistent educational strategies are essential to standardise the care of lower extremity wounds.

Limitations of the survey

This survey is not without its limitations. Baseline demographics were fairly consistent across both professions, however, there was a female predominance but this may reflect the general distribution across these professions.

Incidental sampling was used for convenience. The limitations of incidental sampling are acknowledged; as respondents were delegates at a lower extremity wounds conference held at the university it would be assumed that they have a specialist interest in wound care and are therefore more likely to keep abreast of new innovations and current trends in wound care. The sample would therefore not be representative of the general population of nurses and podiatrists.

One disadvantage of the Quizdom system is that the participants can

select the questions they choose to answer hence the participants did not respond to all questions. However, descriptive analysis was based on the number of responses to each question. Additionally data collected by this method relies on the respondents' accuracy in selecting their chosen response — erroneous results could occur if respondents pressed the wrong button on their keypad. Training was provided at the start of the conference. Additionally the survey relied on respondents replying to the question both honestly and accurately.

Conclusion

Overall this study has provided some basic data about possible education needs that need to be addressed by both nurses and podiatrists. Multiprofessional education within tissue viability is vital if patients are to receive optimum care and this education should commence at undergraduate level. However, after qualifying, time pressures within healthcare areas can prove to be a barrier for staff wishing to access courses and undertake CPD activities. Staff often rely on advice from peers who may themselves not have accessed the most up-to-date information which can prevent development of evidence-based interventions.

Flanagan (1998) argued that educational strategies that promote the use of evidence-based practice could only be achieved through sharing knowledge, critical analysis, managing change and leadership. With this in mind wound care education at the University of Huddersfield will be delivered by a multiprofessional team at undergraduate level and postgraduate level (including CPD) to embrace multiprofessional education and encourage future collaboration and foster better working relationships between nurses and podiatrists. **WUK**

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Key Points

- Lower extremity wound care is carried out by both nurses and podiatrists. However, evidence suggests that some healthcare practitioners have not received appropriate training and may possess poor knowledge.
- A survey was carried out to explore podiatrists' and nurses' attitudes, knowledge, and skills in lower extremity wound care in order to inform the future provision of wound care education at the University of Huddersfield.
- The findings highlighted that the majority of nurses and podiatrists who participated retain and update their wound care knowledge via CPD and discussion with colleagues.
- Respondents also felt that barriers exist that prevent multiprofessional collaboration between nurses and podiatrists.
- In light of these findings, wound care education at the University of Huddersfield will be delivered by a multiprofessional team at undergraduate and postgraduate level (including CPD) to encourage future collaboration and foster better working relationships between nurses and podiatrists.
- Multiprofessional education within tissue viability is vital if patients are to receive optimal care.