

Lower limb complications



I believe

Matthew Young
Consultant Physician, Edinburgh Royal Infirmary, Edinburgh

Whilst there are hundreds of papers each year about screening, wound care and off-loading the diabetic foot, the number of studies that explore the psychology of diabetic foot syndrome continue to grow. This quarter, I have chosen to highlight four of the latest (summarised alongside and on the next pages).

First, it is common practice to ask patients if they have any problems with their feet. As Baba et al demonstrate, this is unreliable given that two-thirds of those who said things were normal had neuropathy and one in ten had clinical signs of vascular insufficiency. Clearly, self-report cannot be relied on and we have to examine our patients.

Bruun et al report that the likelihood of ulceration and amputation can be predicted many years in advance by assessing patient motivation, with poor motivation increasing the risk of ulceration

six-fold and the risk of amputation seven-fold. Should we be surprised, then, that Vedhara et al show that self-care behaviours are directly related to the health beliefs that people hold? If people believe they are at low risk, they will not perform appropriate self-care.

“When poorly motivated patients with inappropriate health beliefs develop ulceration, it is not surprising that they end up conflicted about preventative behaviours and the risk of future ulceration.”

Following this, when poorly motivated patients with inappropriate health beliefs develop ulceration, it is not surprising that they end up conflicted about preventative behaviours and the risk of future ulceration, as Beattie et al demonstrate.

I have long believed that, until we take the psychological aspects of our foot patients' care as seriously as off-loading and infection control, we will never tackle the perennial problems of “non-adherence” and re-ulceration that continue to make the merry-go-round of re-ulceration such a problem for foot services. ■

Diabet Med

Self-awareness of foot health in T2D

Readability ✓✓✓
Applicability to practice ✓✓✓
WOW! Factor ✓✓✓

1 In this cross-sectional study of a community-based cohort in Perth, WA, Australia, 358 people with T2D were questioned about their perceived foot health.

2 The participants had a mean age of 67.4 years and a mean diabetes duration of 9 years. Overall, 213 (59.5%) considered their feet to be normal, while 145 (40.5%) thought they had abnormalities.

3 In general, examination revealed more abnormalities in people who thought they had abnormal feet; however, abnormalities were very common (around 90% of participants) in both groups.

4 In those who thought their feet were normal, peripheral sensory neuropathy (Michigan Neuropathy Screening Instrument score >2 of 8 points) was present in 67.9%, and 9.9% had evidence of peripheral arterial disease (ankle-brachial index <0.90).

5 People who considered their feet to be abnormal were more likely to have a history of numbness, tingling or pain, poor circulation or a problem with their feet in the prior year. Participants' perceptions of foot health were independent of the number of times they had been to a podiatrist or had been examined in the last year.

6 Unawareness of poor foot health was associated with older age.

7 These results show that the majority of people with T2D who believed their feet were healthy had abnormalities that placed them at high risk of serious later complications. The authors call for better patient education and monitoring, particularly in older people.

Baba M, Foley L, Davis WA, Davis TM (2014) Self-awareness of foot health status in patients with type 2 diabetes: the Fremantle Diabetes Study phase II. *Diabet Med* 31: 1439–45

Atherosclerosis

Association of borderline abnormal ABI with mortality

Readability ✓✓✓
Applicability to practice ✓✓✓
WOW! Factor ✓✓✓

1 Most studies investigating the link between ankle-brachial index (ABI) and mortality use an ABI of ≤0.90 as an indicator of peripheral arterial disease (PAD); however, people with diabetes may be at risk with a borderline abnormal ABI of 0.91–0.99.

2 Therefore, the authors compared the risk of PAD and cardiovascular and all-cause mortality in people with diabetes and either normal ($n=3294$), borderline ($n=333$) or abnormal ($n=354$) ABI.

3 Over 3 years of follow-up, the adjusted risk of all-cause death was higher in people with abnormal ABI (hazard ratio [HR], 2.16) or borderline ABI (HR, 1.78) compared with those with normal ABI. PAD was also more common in people with borderline ABI (HR, 3.10).

4 Routine early screening for ABI could, therefore, have prognostic value in people with diabetes.

Natsuaki C, Inoguchi T, Maeda Y et al (2014) Association of borderline ankle-brachial index with mortality and the incidence of peripheral artery disease in diabetic patients. *Atherosclerosis* 234: 360–5

Diabet Med

Motivation predicts foot ulcers and amputation in people with T2D

Readability ✓✓✓
 Applicability to practice ✓✓✓✓
 WOW! Factor ✓✓

- The effects of motivation and life circumstances on foot ulceration in people with T2D were evaluated using data from the DCGP (Diabetes Care in General Practice) study and the Danish National Patient Register.
- A total of 1058 people were evaluated 6 years after diagnosis of T2D and followed for another 13 years. Motivation (poor, fair, good or very good) was assessed by the clinician and by participants' reports on efforts to control the condition.
- At the 6-year evaluation, 2.93% of the participants had a diabetic foot ulcer (DFU). In the following 13 years, 45 people underwent amputation (32 major, defined as through or above the ankle).
- After adjustment for age, gender, diabetes duration and education, physicians' assessment of motivation, but not the patients' perceptions, was associated with DFUs (odds ratio [OR] for poor vs very good, 6.11) and later amputation (OR, 7.12).
- The physicians' perception of the influence of the patients' life circumstances as good, absent or poor was also associated with amputation outcomes (OR for poor vs good influence, 2.97 for all amputations; 3.49 for major amputations).
- These results show that general practitioners' evaluations of patient motivation are useful to identify people at high risk of DFUs and amputation. The ways that clinicians assessed motivation were not documented, but future research into such assessments would be useful.

Bruun C, Guassora AD, Nielsen AB et al (2014) Motivation, effort and life circumstances as predictors of foot ulcers and amputations in people with type 2 diabetes mellitus. *Diabet Med* **31**: 1468–76

Diabetes Res Clin Pract

Illness beliefs predict self-care in people with diabetic foot ulcers

Readability ✓✓✓
 Applicability to practice ✓✓✓✓
 WOW! Factor ✓✓

- The authors sought to prospectively evaluate the effect of individuals' beliefs about their diabetic foot ulcers (DFUs) on their likelihood to adopt self-care behaviours.
- At study initiation, 169 people with diabetes completed the Brief Illness Perceptions questionnaire, which assesses beliefs according to seven key domains. They also completed the foot care subscale of the Summary of Diabetes Self-Care Activities measure after 6, 12 and 24 weeks.
- After controlling for age, DFU size and self-care behaviours at baseline, these beliefs accounted for 42–58% of the variance in foot self-care behaviours at the various follow-up points.
- The people who were most likely to engage in self-care behaviours at 6 and 12 weeks were those who experienced more symptoms (identity domain) but had a poorer understanding of their DFUs (coherence domain).
- At 24 weeks, the identity domain remained a significant predictor and the coherence domain was of borderline significance ($P=0.06$). The personal control domain (belief in one's own ability to manage the condition) also became significant.
- The fact that greater perceived understanding of DFUs led to worse self-care suggests that these beliefs may have been erroneous. Interventions to change the beliefs of people with DFUs, particularly false beliefs about the condition and the individual's ability to manage it, may improve adherence and outcomes in these people.

Vedhara K, Dawe K, Wetherell MA et al (2014) Illness beliefs predict self-care behaviours in patients with diabetic foot ulcers: a prospective study. *Diabetes Res Clin Pract* **106**: 67–72

Health Expect

Emotional effects of diabetic foot ulcers

Readability ✓✓✓
 Applicability to practice ✓✓✓✓
 WOW! Factor ✓✓

- While there is much evidence of the negative emotional effects of active diabetic foot ulcers (DFUs), the emotions of people who have recovered from a DFU (but who are at high risk of recurrence) are less well studied.
- Therefore, these authors conducted semistructured interviews to assess the emotional experiences and beliefs in 15 people with diabetes and a recent history of DFUs but who were ulcer-free at the time.
- The most common theme among the participants was a perceived lack of control in preventing further DFUs and a sense of hopelessness.
- This perception was associated with many negative emotions, including fear of amputation, incapacitation and loss of work, as well as regret and guilt for not taking better care of their diabetes and feet in the past. These occurred even in those who had only had a single DFU.
- Many felt that they had few opportunities to discuss their emotions with friends, family or colleagues, particularly because of stigma and lack of understanding.
- Experiencing a DFU often led to some positive behavioural change, but many felt the need to balance optimal self-care with leading as normal a life as possible.
- The authors admit some selection bias as all participants were able and willing to attend their clinic. Nonetheless, interventions to challenge patients' beliefs and reduce the impact of these emotions could help improve self-care behaviours.

Beattie AM, Campbell R, Vedhara K (2014) "What ever I do it's a lost cause." The emotional and behavioural experiences of individuals who are ulcer free living with the threat of developing further diabetic foot ulcers: a qualitative interview study. *Health Expect* **17**: 429–39

“These results show that the majority of people with T2D who believed their feet were healthy had abnormalities that placed them at high risk of serious later complications.”