

Multidisciplinary foot care teams and patient expectations

KEY WORDS

- ▶ Adherence
- ▶ Diabetes
- ▶ Diabetic foot ulcer
- ▶ Multidisciplinary foot care team
- ▶ Patient expectations

Foot ulcers are a recognised complication of diabetes that can result in lower extremity amputation and early mortality. Rapid access to a multidisciplinary foot care team and associated care pathways/protocols improves patient outcomes. Patient expectations in care are increasing, however, poor public comprehension of diabetes and its complications is proving a barrier to achieving positive healthcare outcomes. Understanding patient beliefs and healthcare expectations are key to engagement in treatment planning, adherence to care plans and better use of scant resources.

Recent publication by the Kings Fund (Maguire et al, 2016) highlighted the current struggle of the NHS to meet standards of care or financial stability, despite funding protection. Increasing demands on services, attributed to population increase, people living longer with multiple chronic conditions and rising patient expectations were highlighted as key factors.

The global prevalence of diabetes is estimated at over 400 million (World Health Organization [WHO], 2016), with current UK data suggesting 3.6 million people diagnosed and a likely 1 million undiagnosed (Diabetes UK, 2016). Diabetic foot ulcers (DFU) are a recognised complication of the disease process, experienced by 10% of people with diabetes at some point in their lives (National Institute for Health and Care Excellence [NICE], 2015). With over 60% of DFU failing to heal after 20 weeks of care (Kantor and Margolis, 2000), lower extremity amputation (LEA) and early mortality are all too common outcomes (Apelqvist et al, 1993; Moxey et al, 2011). In 2014, the financial impact of providing health care related to DFU and LEA in England was estimated to be £580m, the equivalent of £1 in every £175 of NHS spends (Kerr et al, 2014).

The management of DFU is guided by international recommendations (Schaper et al, 2016; World Union of Wound Healing Societies,

2016) which have directed national strategies in the UK (Diabetes UK et al, 2011; NICE, 2015; British Orthopaedic Association et al, 2016). A common theme across these guidance is rapid access to a multidisciplinary foot care team (MDFT) for those with active foot disease, to improve patient outcomes.

MULTIDISCIPLINARY FOOT CARE TEAM

A number of intrinsic and extrinsic factors contribute to the formation of and subsequent delayed healing in DFU (Falanga, 2005), with successful management requiring a multidisciplinary approach (Driver et al, 2010; Sumpio et al, 2010). The benefits of rapid assessment/treatment from relevant specialisms has been consistently demonstrated by both international and UK based studies showing significant reductions in LEA rates and mortality with the introduction of MDFT and associated care pathways/protocols (Ortegon et al, 2004; Canavan et al, 2008; Krishnan et al, 2008; Armstrong et al, 2012).

In addition to reduction in LEA rates and costs of wound care provision, the establishment of MDFT care is underpinned by evidence of gains in quality-adjusted life-years (QALYs) (Ortegon et al, 2004; Barshes et al, 2017). The WHO (2014) define QALYs as a unit of measurement of utility that combines both life years gained, as a result of an intervention, with a judgement about the quality of those years. In a previous study, Ortegon et al (2004) reported

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that despite increased initial costs associated with optimal guideline based foot care, the resultant cost per QALY gained with a 50% reduction in LEA would be \$12,165. With reductions in DFU development, healing times and LEA rates secondary to the optimised care, the subsequent cost of managing DFU and LEA in the caseload could decrease by >50%.

Further support is offered by more recent work in which an increase in QALYs was reported with guideline based DFU interventions in a hypothetical model of care (Barshes et al, 2017). Providing this level of care to 100% of patients with DFU would cost \$3,500 per QALY, but in contrast to the previous study the authors did not report any predicted cost savings. Both studies carried out analyses within a Markov model of care to demonstrate the clinical and cost effective applicability of guidelines based care for DFU management. If transferrable from theory to clinical practice, the results of which are likely to be attractive to those commissioning services.

Despite considerable evidence of the benefits on patient outcomes which are now supported by cost effectiveness studies, there remains inconsistent provision of MDFT services (Healthcare Quality Improvement Partnership, 2017). This variation in access to specialist care has been demonstrated to contribute to marked variation in both global and UK LEA rates (Moxey et al, 2011; Holman et al, 2012; Carinci et al, 2016; Public Health England, 2016). A key resource acting as a barrier to effective MDFT provision identified by McIntosh (2017) is the estimated national shortage of 7,000 podiatrists.

In a nationalised healthcare system such variations in outcomes raise questions around differences in the organisation/delivery of care. The National Diabetes Foot Care audit (NDFA) was launched to measure care structure and patient management/outcomes for those with DFU and so appraise performance against NICE guidelines (NICE, 2015). Less than 75% of commissioners reported to have an established referral pathway for those with DFU to access expert assessment (Healthcare Quality Improvement Partnership 2017). The results of the audit identified that time to MDFT review was ≥ 2 weeks for 40% of referrals, despite the recommendation of referral within one day and triage within two days (NICE, 2015).

To recognise why such variations in provision of MDFT care and resultant clinical outcomes occur, it is necessary to understand how NHS services are commissioned. Under the umbrella of NHS England, the Department of Health holds responsibility for funding and policies, with local health care commissioned by Clinical Commissioning Groups (CCGs) and provided by NHS Foundation Trusts (The Medic Portal, 2017). To reflect the needs of their local population CCGs are required to produce sustainability and transformation plans (Alderwick et al, 2016). The implementation of guideline based care for DFU management is the responsibility of individual CCGs and provider trusts, however this has to be balanced against all the healthcare needs of the population (NHS England, 2017a).

Longstanding financial pressures on the NHS have resulted in a considerable gap between UK demand for health care and the available funds to meet this, not least because of people living longer with more complex chronic conditions (NHS Confederation, 2013). In acknowledgement of these pressures, NHS England published the 'Five Year Forward View' (2014) to promote long term sustainability. The paper noted long term conditions to be a central task of the NHS. From this the NHS Diabetes Prevention Programme (NHS DPP) was launched in 2016, recognising the challenge of the growing incidence of diabetes.

In addition to reducing the risk of diabetes, the need to improve outcomes for those with the disease and reduce national variation was highlighted by NHS DPP (Valabhji, 2016). The aim of all CCGs commissioning an MDFT with sufficient capacity has been identified as a clinical priority area, with £8 million available in a transformation fund for allocation in response to bids to NHS England from CCGs.

A further strategy used by NHS England to support improvements in the quality of care provided is the Commissioning for Quality and Innovation (CQUIN) framework in which a proportion of income for healthcare providers is conditional on demonstrating improvements in key areas (McDonald et al, 2013). Of the 13 indicators in the 2017–19 CQUIN (NHS England, 2016) one in particular has relevance to DFU management; increase the number of full wound assessments

“If seeking information about how to stay healthy or possible threats to health, more responders reported looking to websites such as Google, Wikipedia and BBC news than validated sites such as NHS choices.”

for wounds which have failed to heal after four weeks. Whilst the indicator is quite general, it is aimed at community providers of wound care, so the hope is that it will promote the wider profile of effective wound care and resources and may raise awareness of MDFT services and referrals amongst community staff.

PATIENT EXPECTATIONS

A global survey of healthcare professionals (HCPs) reported the opinion that patient expectations are increasing in relation to standards of care, provision of information, involvement in decisions about their health care and access to latest treatments (Economist Intelligence Unit, 2009). Such changing attitudes of healthcare users is undoubtedly contributing to the pressures faced by the NHS. Despite this, levels of dissatisfaction with the NHS remain at 23%, with availability of resources a common theme (Appleby et al, 2016).

Surveying UK public awareness and concerns of health issues revealed 16% of the population to be concerned about diabetes, with personal experience and media reports cited as the main reasons for concern (Public Health England, 2014). If seeking information about how to stay healthy or possible threats to health, more responders reported looking to websites such as Google, Wikipedia and BBC news than validated sites such as NHS choices. Alarmingly, the survey reported only 26% of respondents to be very confident in trusting an NHS body about possible threats to their health.

Earlier research specifically exploring knowledge of diabetes reported a poor comprehension of potential complications (Diabetes UK, 2005). Awareness of the risk of amputation was 45% in the general public and 64% in those with diabetes. In a further UK study, exploring beliefs about diabetic foot complications and self-care practice, the majority of patients had no clear awareness of DFU or of common obstacles to successful treatment (Gale et al, 2008). They also engaged in foot-related practices that they perceived to be beneficial, but the authors claimed could increase the risk of ulceration, such as walking barefoot to keep joints flexible.

Lack of understanding/knowledge of DFU aetiology and management is a major barrier to effective self-care and positive health outcomes (Gale et al, 2008). Laing et al (2010) described

the emergence of the ‘contemporary information society’, with the availability of internet driven information altering the relationship between patients and HCPs and expectations influenced by media portrayal of healthcare systems (Bleich et al, 2009). With a wealth of material of variable quality accessible regarding DFU, it is essential HCPs guide patients towards validated in-house literature or publically available accurate quality sources. Organisations such as Diabetes UK provide guidance on the impact of DFU, what action to take and services to expect.

According to Hornsten et al (2005) the focus in patient education has moved away from simple information giving, to empowering patients to improve their self-management skills, self-efficacy and motivation. Shared decision making has become established practice in health care, with the aim being to decrease the information/power asymmetry between clinicians and patients, so increasing the sense of autonomy (Charles et al, 1997). It has been argued that patients are more likely to follow through decisions about their care if they feel they have participated in the decision making process (Kaplan et al, 1996). Although this view is challenged by a recent pilot study in which an intervention to increase shared decision making failed to increase adherence to foot treatment, instead suggesting consideration of interventions to influence personal beliefs (McBride et al, 2016). Both approaches require more consultation time to discuss treatment options and agree mutually acceptable treatment plans or challenge health beliefs (Kaplan et al, 1996). In the short term, this can often be in direct conflict with appointment availability and demands on clinical time.

Fenton et al (2012) proposed that satisfied patients are generally more adherent to physician recommendations, and patient experience is agreed to be an important determinant of satisfaction (Bleich et al, 2009). The healthcare expectations a patient holds and whether or not these are met contribute to overall patient experience, thus clinicians must focus on effective communication and participatory decision making (Bowling et al, 2013). Disappointingly, in a UK study exploring beliefs about diabetic foot complications and self-care practice, most participants reported some difficulty communicating with HCPs, leaving them

feeling confused and more likely to ignore foot-health advice (Gale et al, 2008).

Patient beliefs and adherence to medical advice remain barriers to implementing strategies of care for DFU management (Barshes et al, 2013). A failure to embrace concordance imposes both personal costs to the patient and financial burdens on the NHS (Holman and Lorig, 2004). In an independent assessment of the long term resource requirements of the NHS, Wanless (2002) suggested that when patients are fully engaged in their health, resources are used more efficiently. Behavioural changes are critical in the management of DFU (Searle et al, 2005), theories underpinning the reasons why individuals choose to engage in health advice or not can be found in health psychology.

In applying health psychology, Ogden (2012) notes that the whole person should be treated not just their physical illness, and so the patient is part responsible for their treatment, whether that be taking medication or embracing behaviour change. The Health Belief Model (HBM) is used to predict preventative health behaviours and behavioural response to treatment based on a set of core beliefs; susceptibility to illness; severity of the illness; costs involved in carrying out the behaviour (barriers); benefits involved in carrying out the behaviour; cues to action (Ogden, 2012). In a meta-analysis of HBM studies, Carpenter (2010) reported benefits and barriers were the strongest predictors of behaviour. In a qualitative study of patients with DFU, Searle et al (2005) noted patients to be less likely to adhere to treatment recommendations that conflicted with their usual or preferred lifestyles, in particular rest/reduced activity. This may be explained by the 'barriers' in the HBM, in that such behaviour prevents/impedes on activities of daily living or employment.


The concept of Health Locus of Control (HLC) can be used to differentiate individuals who regard events as controllable by them (internal locus of control) or uncontrollable by them (external locus of control) (Ogden, 2012). In early work measuring various aspects of diabetes self-management, foot-care and exercise were areas with consistently lower levels of compliance. Analysis demonstrated a statistically significant relationship ($p < 0.05$) between compliance and internal locus of control (and Hart, 1984). These findings are supported in

a study examining the emotional and behavioural consequences for patients with DFU (Beattie et al, 2014). Individuals who perceived they had little or no control over their illness were more likely to experience higher levels of emotional distress and less likely to self-manage their condition.

CONCLUSIONS

The NHS is struggling to meet desired standards of care and financial stability due to increasing demands on services and patient expectations (Maguire et al, 2016). Over 3.6 million people in the UK are diagnosed with diabetes, with the resultant high rate of ulceration, impaired wound healing and LEA placing large demands on the health service (Kantor and Margolis, 2000; Moxey et al, 2011; Diabetes UK, 2016).

The provision of rapid access to specialist assessment/treatment within an MDFT, as recognised by national guidelines (NICE, 2015), improves clinical outcomes and provides gains in QALYs (Ortegon et al, 2004; Canavan et al, 2008; Krishnan et al, 2008; Armstrong et al, 2012). There is an unacceptable variation in MDFT access across the UK (Healthcare Quality Improvement Partnership 2017) which is being addressed by NHS DPP (Valabhji, 2016) as part of a plan to provide long term sustainability in the NHS (NHS England, 2014). However this is limited by competing demands of health improvements in other areas relating to quality and financial incentives (McDonald et al, 2013; NHS England, 2017b).

Patient expectations of health care are increasing (Economist Intelligence Unit 2009), however poor public comprehension of diabetes and its complications is proving a barrier to achieving positive healthcare outcomes (Diabetes UK 2005; Gale et al, 2008). To overcome this, patient education is taking the direction of empowering self-management (Hornsten et al, 2005) with the need for effective communication and clinic time being spent on shared decision making to increase concordance with care recommendations (Kaplan et al, 1996; Bowling et al, 2013). If not correctly managed, patient beliefs can be a barrier to implementing effective strategies for DFU management (Carpenter, 2010; Barshes et al, 2013; Beattie et al, 2014) with patient engagement key to the efficient use of resources (Wanless, 2002). 

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