

ORIGINAL ARTICLE

Perceptions and experiences of diabetic foot ulceration and foot care in people with diabetes: A qualitative meta-synthesis

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Diabetic foot ulceration (DFU) is a common and debilitating complication of diabetes that is preventable through active engagement in appropriate foot-related behaviours, yet many individuals with diabetes do not adhere to foot care recommendations. The aim of this paper was to synthesise the findings of qualitative papers exploring diabetic people's perceptions and experiences of DFU in order to identify how they could be better supported to prevent ulceration or manage its impact. Five databases (MEDLINE, PsycINFO, CINAHL, EMBASE, Web of Science) were searched in May 2016 to identify eligible articles. Findings were synthesised using a meta-ethnographic approach. Forty-two articles were eligible for inclusion. Synthesis resulted in the development of five overarching themes: *personal understandings of diabetic foot ulceration; preventing diabetic foot ulceration: knowledge, attitudes, and behaviours; views on health care experiences; development of diabetic foot ulceration and actions taken; and wide-ranging impacts of diabetic foot ulceration*. The findings highlight various barriers and facilitators of foot care experienced by people with diabetes and demonstrate the significant consequences of ulcers for their physical, social, and psychological well-being. The insights provided could inform the development of interventions to promote foot care effectively and provide appropriate support to those living with ulceration.

KEYWORDS

diabetic foot ulcer, foot care, patient experience, qualitative

1 | INTRODUCTION

Diabetic foot ulceration (DFU) is among the most common and debilitating complications of diabetes, with a lifetime incidence of up to 25% in people with this condition.¹ DFU represents a major health problem in this population because of its deleterious impact on physical and psychosocial functioning² and increased risks of DFU recurrence,³ amputation,¹ and mortality.⁴ Treatment is expensive and challenging, often involving prolonged hospitalisation and complex medical procedures. At least one-third of direct costs generated by the treatment of diabetes and its complications in the United States is linked to DFU.⁵ The personal, societal, and economic costs of DFU, coupled with the

rapidly increasing prevalence of diabetes worldwide,⁶ highlights the importance of developing effective prevention strategies and supports.

DFU is multifactorial in causation, usually resulting from interactions between biological risk factors (eg, peripheral neuropathy) and foot-related behaviours (eg, wearing ill-fitting shoes). It is estimated that at least 75% of all cases could be avoided through high-quality preventive care.⁷ The patient's active engagement in foot care is a cornerstone of successful prevention.^{8,9} Key behaviours that reduce the risk of developing DFU include daily inspection of feet and immediate reporting of irregularities to a health professional, avoidance of behaviours that place the foot at risk (eg, walking barefoot), consistent use of appropriate

footwear, and attendance of annual foot screening.^{9,10} However, many individuals with diabetes do not practice these behaviours.^{8,11,12} For example, almost two-thirds check their feet rarely if at all,⁸ and few adhere to footwear recommendations.^{13,14}

The importance of the patient's perspective in successfully promoting engagement in foot care has been widely noted.^{2,8,15} Although national and international guidelines on the management of the diabetic foot strongly emphasise educating patients in appropriate foot self-care,^{8,9} the efficacy of existing interventions is limited; this has been attributed to their inattention to the psychosocial processes underlying foot-related behaviours.² Exploring patients' views and experiences of DFU may help to further our understanding of the factors that contribute to their engagement in foot care, identify targets for interventions that will effectively promote these behaviours, and ensure that recommendations for practice fit with their needs and personal interpretations of this condition.

A meta-synthesis involves drawing together the findings of qualitative studies in order to build a more in-depth understanding of a specific phenomenon and is being used increasingly to inform health-related policy and practice.¹⁶ The aim of the present review is to conduct a meta-synthesis of qualitative studies exploring the perceptions and experiences of individuals with diabetes regarding DFU. It is anticipated that our findings will offer useful insights on how individuals with diabetes could be better supported to prevent, or manage the impact of, DFU.

2 | METHODS

2.1 | Search strategy

MEDLINE, PsycINFO, CINAHL, Embase, and Web of Science databases were searched from inception to 11 May 2016 (see Appendix for a sample search strategy). A comprehensive list of qualitative methodology search terms was included to maximise the identification of relevant articles.¹⁷ Reference lists of eligible papers were hand-searched for additional material. Two authors (L.C. and C.M.) screened titles and abstracts for relevance and independently reviewed the full texts of potentially eligible papers. Any disagreements were discussed and brought to a third author (P.G.) if consensus could not be reached.

2.2 | Selection criteria

Papers were included if they (a) included a sample of adults (ie, aged 18 years+) with diabetes and explored their perceptions and/or experiences of DFU, (b) used qualitative methods of data collection and analysis, (c) were written in English, and (d) were published in a peer-reviewed journal. Papers were excluded if (a) they included individuals

Key Messages

- diabetic foot ulceration is a common and debilitating complication of diabetes; although ulcers are often preventable through appropriate foot-related behaviours, many individuals with diabetes do not adhere to foot care recommendations
- this meta-synthesis identifies several barriers and facilitators of foot care in this population and highlights the wide-ranging impact that diabetic foot ulcers can have on their everyday lives
- these findings could be used to inform the development of interventions that effectively promote patient engagement in foot care and provide support to those living with ulceration

without diabetes in their samples and did not report findings for participants with diabetes separately or (b) their qualitative findings lacked sufficient detail to contribute meaningfully to the synthesis (ie, no themes reported).

2.3 | Quality assessment

The quality of included papers was assessed independently by two authors (L.C. and C.M./P.G.) using the Critical Appraisal Skills Programme (CASP) qualitative research checklist.¹⁸ CASP considers the rigour and credibility of evidence in eight areas: research design, recruitment, data collection, reflexivity, ethical issues, data analysis, findings, and value of the research. Reviewers used a three-point rating system¹⁹ to assign scores based on whether the paper being assessed was considered to provide a weak (a), moderate (b), or strong (c) explanation of each area. Any differences between scores were resolved through discussion and reference to a third reviewer (C.M./P.G.) if required. Scores were summed for each paper, giving a possible score of 8 to 24. Papers were not excluded on the basis of their scores; reviews were conducted to aid readers' critical consideration of their credibility.

2.4 | Data synthesis

A meta-ethnographic approach,^{20,21} which has been applied extensively in health care research on patient experiences of illness and care,¹⁶ was used to synthesise data. The Enhancing Transparency of Reporting the Synthesis of Qualitative Research (ENTREQ) statement²² was followed. Eligible papers were read and re-read by L.C. and C.M.; their details were recorded by C.M. using a data extraction form. A table of first- and second-order constructs relevant to the aim of the meta-synthesis was compiled for each paper by L.C. First-order constructs are study participants' interpretations of their experience (ie, direct quotations); second-order constructs are study authors' interpretations of participants' accounts. Using these tables, L.C. grouped conceptually similar constructs from different papers together to identify key

concepts (ie, common and recurring themes). A grid of key concepts was then produced and used to develop third-order constructs (ie, the views and interpretations of the synthesis team, expressed in terms of higher-order themes and sub-themes). L.C. led the synthesis; third-order constructs were confirmed independently by C.M. and P.G.

3 | RESULTS

3.1 | Study selection

The systematic search yielded 1539 results excluding duplicates, of which 1386 were excluded at title/abstract. Full texts of the remaining 153 articles were obtained; 114 were excluded upon reading. Three additional papers were identified from the reference lists of included papers. Overall, 42 articles^{23–64} reporting the findings of 35 qualitative studies were selected for inclusion (Figure 1).

3.2 | Study characteristics

The characteristics of included papers are summarised in Table 1. The majority were based on research conducted in the United Kingdom ($n = 18$); the remaining papers originated from Sweden ($n = 4$), the United States ($n = 3$), Australia ($n = 2$), Brazil ($n = 2$), Jordan ($n = 2$), Norway ($n = 2$), Barbados ($n = 1$), Bermuda ($n = 1$), Canada ($n = 1$), France ($n = 1$), Iran ($n = 1$), Ireland ($n = 1$), South Africa ($n = 1$), and Uganda ($n = 1$); one included

participants from Germany, Italy, and the United Kingdom. Sample sizes were reported in all but one paper²⁶ and ranged from 3 to 67. DFU status varied across studies, where reported. In 32 papers, all participants had previous or current diabetes-related foot complications. In five papers, some ($n = 4$) or all ($n = 1$) participants were described as having no history of ulceration; five papers did not specify participants' foot health status. Thirty-three papers used interviews as their primary method of qualitative data collection, six used focus groups, and three incorporated both methods.

3.3 | Quality assessment

CASP total scores for each paper are provided in Table 1. The quality was good overall but varied considerably across papers, with scores ranging from 10 to 21 of a possible 24 ($M = 16.43$, $SD = 2.81$, median = 17). In the eight areas assessed, ratings were generally the lowest for reflexivity and highest for quality of findings and value of the research.

3.4 | Data synthesis

Synthesis resulted in the identification of five overarching themes: (a) personal understandings of DFU, (b) prevention of DFU: knowledge, attitudes, and behaviours, (c) views on health care experiences, (d) development of DFU and actions taken, and (e) wide-ranging impacts of DFU. These themes and their sub-themes are outlined in Table 2, along with illustrative quotations from participants and a list of the papers that contributed to their development.

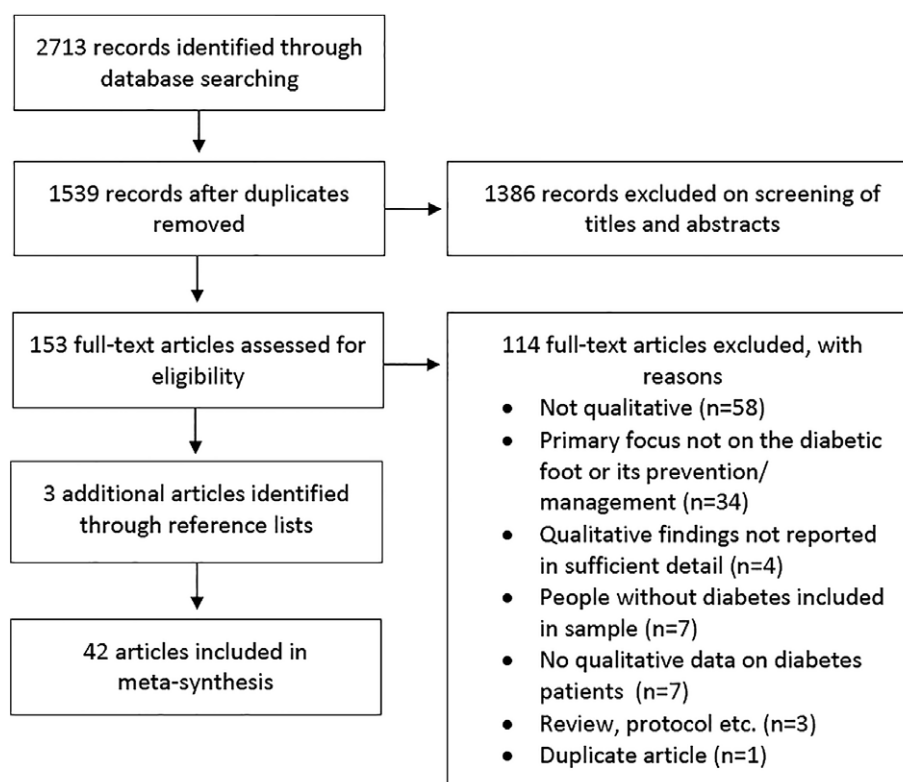


FIGURE 1 Flow diagram of article selection process

3.4.1 | Personal understandings of DFU

Several papers explored participants' knowledge and perceptions of DFU, which revolved around its identity, cause, timeline, consequences, and controllability. Overall, participants' comprehension of DFU was often either limited or erroneous. This had the effect of impeding attempts at self-care and resulted in participants exposing their feet to greater risks in some cases.

Identity

Some participants, including those with previous^{28,31,34} or active⁶¹ ulceration, lacked awareness as to what DFU is or looks like.^{28,31,34,40,61} This hindered foot self-care²⁸ and delayed both ulcer detection^{28,34,61} and seeking of medical attention,^{28,34} putting the foot at increased risk for negative sequelae.

Cause

Participants' beliefs regarding DFU causation often conflicted with conventional medical understanding of this condition. Many were unaware, or had limited knowledge, of the role diabetes plays in DFU aetiology, irrespective of their ulceration status.^{24–26,31,34–37,40,43,45,46,51,52,56,61,64} Some only received a diagnosis of diabetes on presenting with an ulcer,^{24,25,56} while others did not become aware of the relationship between diabetes and foot problems until seeking treatment for ulceration.³⁷ Several participants cited poor circulation as the primary cause of DFU/amputation.^{26,31,36,40,43,45,56,61} Loss of sensation from peripheral neuropathy was sometimes misinterpreted as reduced blood flow to the feet,^{40,56,61} leading to misunderstandings regarding the purpose of tests to assess peripheral sensation⁶¹ and misguided attempts to increase circulation by walking barefoot or wearing open-toed sandals, which inadvertently put them at an increased risk of foot injury.^{40,61} Some participants described culturally specific beliefs they held about DFU causation that diverged from medical explanations of this condition.^{51,52,56,64}

Timeline

There was some evidence that individuals who had no prior experience of ulceration viewed DFU as an acute condition that would heal quickly,^{34,39,40,46,58,60} whereas those with previous or active ulcers viewed healing as a prolonged, or indefinite, process.^{32,36,39,43–46,51,52,55,61}

Consequences

Many participants were either unaware of, or unconcerned about, their risk of diabetes-related foot problems.^{24–27,31,33,34,39,40,42,48,51,53,56,61} Some believed that DFU and amputation only occurred in acute cases^{24,61} or instances of poor hygiene⁴⁰ and were critical of individuals who neglected themselves to such an extent.^{35,40,48} It was apparent that many individuals did not consider cuts or

sores on the foot to be a cause for concern^{40,45,46,52,61} and believed they would heal easily without medical intervention.^{23,34,39,40,45,46,52,61} Those with a history of ulceration acknowledged that they had failed to grasp the potential seriousness of DFU before it was too late.^{28,34,39,48,58,61,62} However, some individuals with no prior experience were aware of the risks and feared developing an ulcer.^{35,52} Fear of amputation was also frequently reported,^{26,28,30,33,35,36,39,40,43–47,52,54,58,60,61,63,64} especially among those who either had personal experience of DFU^{26,28,30,33,36,39,43–47,54,58,60,63,64} or knew someone who had undergone this procedure.^{33,39,40,52,60,61,64}

Controllability

Many individuals had limited perceived control over DFU, particularly those with previous or current ulcers, and felt that little could be done to prevent DFU occurrence^{26,28,39,43–46,51,52,58,60,61} or were unaware that there were different stages at which action could be taken,^{26,44–46,61} leading to a sense of hopelessness and resignation.^{26,28,39,43–46,51,52,58,60} Participants in several papers, especially those with a history of ulceration,^{26,28,30,36,38,39,43–47,51,54,58,60} expressed uncertainty^{28,30,36,38,39,46,47,51,54,58,60} or had a negative outlook^{26,38,39,43–47,52,58} regarding the future.

3.4.2 | Preventing DFU: Knowledge, attitudes, and behaviours

Participants' knowledge of, attitudes towards, and engagement in behaviours that prevent DFU were examined across papers. It was apparent that even when knowledge of appropriate foot care behaviours was present, perceived barriers, such as their impingement on everyday activities, precluded adherence.

Foot self-care knowledge, engagement, barriers, and motivators

Varying levels of knowledge and engagement in foot self-care were reported by participants. Many recognised the importance of maintaining healthy feet and avoiding DFU^{28,34–36,39,40,43–46,52,61,62,64} and demonstrated good awareness of appropriate behaviours,^{25,26,28,35–37,43–46,51,52,61,62,64} such as seeking immediate medical assistance for foot injuries.^{28,31,33,35,36,40,43–46,51,61,62,64} These individuals tended to practice foot self-care regularly.^{28,30,31,35,36,40,43,45–47,51,52,61,62,64} Others, however, lacked even a basic knowledge of,^{25,33,43,45,46,52,61,64} or perceived little need for,^{24–27,31,33,40,48,52,61} preventive action; their behavioural performance was often limited or inconsistent at best.^{26,40,45,46} Several factors appeared to impede engagement in foot self-care, in addition to participants' misperceptions of DFU outlined in the previous theme. Some disregarded foot self-care recommendations as they had difficulty accepting their diabetes.^{26,28,33,39,44,48,52} For others, the lack of visible symptoms and gradual onset of this “silent disease”³⁵ provided few cues for action, leading them to become

TABLE 1 Characteristics of included papers

First author (year of publication)	Country	Recruitment setting	Aim	Sample size	Gender	Age	Disease status	Method of data collection	CASP score (/24)
Abu-Qamar (2012) ²³	Jordan	6 hospitals, one health care centre	To elaborate patients' views of diabetic foot care within the Jordanian health care system	7	4 males, 3 females	52–69 y	Diabetes (duration of up to 29 y); foot burn injury	Unstructured face-to-face interviews	14
Abu-Qamar (2011) ²⁴	Jordan	6 hospitals, one healthcare centre	To illuminate the lived experience of diabetic patients who have sustained foot burn injuries	7	4 males, 3 females	52–69 y	Diabetes (duration of up to 29 y); foot burn injury	Unstructured face-to-face interviews	18
Aliasgharpour (2012) ²⁵	Iran	Large urban hospital	To clarify the care process for Iranian diabetic patients with diabetic foot ulcer condition	11	Not reported	Not reported	Diabetes; diabetic foot ulcer condition	Semi-structured interviews	15
Anders (2010) ²⁶	Germany, Italy, United Kingdom	Recruited from data held by market research companies	To provide insight into the perceptions, motivations, and barriers to successful foot care among people with diabetes	Not reported	Not reported	40–65 y	Type 1 or type 2 diabetes One group of people with a history of diabetic foot ulceration One group of men at low risk of diabetes-related foot problems One group of women at low risk of diabetes-related foot problems	Focus groups	12
Ashford (2000) ²⁷	United Kingdom	Hospital outpatient clinic for people with diabetic foot problems	To address quality-of-life issues in patients with diabetic foot ulcers	21	15 males, 6 females	49–75 y	Type 1 (n = 12) or type 2 (n = 9) diabetes (duration of 6 mo to 30 y); diabetic foot ulceration	Semi-structured face-to-face interviews	14
Beattie (2014) ²⁸	United Kingdom	Hospital podiatry clinics	To examine the emotional and behavioural consequences of living with heightened risk of re-ulceration	15	7 males, 8 females	26–73 y	Type 1 (n = 7) or type 2 (n = 8) diabetes; history of diabetic foot ulcers but ulcer-free at present	Semi-structured face-to-face interviews	21
Bradbury (2011) ²⁹	United Kingdom	Specialist diabetic foot clinic	To explore the effect of DFU pain on quality of life from the patient's perspective	3	2 males, 1 females	71–86 y	Type 2 diabetes (duration of 10–30 y); active diabetic foot ulceration	Semi-structured face-to-face interviews	20
Brod (1998) ³⁰	United Kingdom	Not reported	To examine the impact of lower-extremity ulcers on the quality of life of patients with diabetes and their caregivers	14	8 males, 6 females	19–77 y	Diabetes (duration of 5–51 y, mean = 20 y); active lower-extremity ulceration	Focus groups	12
Burnside (2007) ³¹	United Kingdom	GP surgeries	To explore patient experiences and preferences for the delivery of educational material regarding foot care	18	12 males, 6 females	Mean age = 71 y	Diabetes; loss of peripheral sensation; no history of DFU (n = 10) or current/previous DFU (n = 8)	Semi-structured face-to-face interviews	14

TABLE 1 (Continued)

First author (year of publication)	Country	Recruitment setting	Aim	Sample size	Gender	Age	Disease status	Method of data collection	CASP score (24)
Burton (2007) ³²	United Kingdom	Orthotic vascular clinic	To explore the experiences of adults with diabetes regarding the prescription and wearing of orthotic devices to better understand why some patients chose not to wear them	8	6 males, 2 females	41–76 y	Type 1 (n = 5) or type 2 (n = 3) diabetes; prescribed a patellar-tendon-bearing orthosis; DFU status not specified	Semi-structured face-to-face interviews	20
Chadwick (2002) ³³	United Kingdom	Not reported	To explore the health knowledge, beliefs, behaviours, and decisions of people with type 2 diabetes who ulcerate for the first time	8	Not reported	Not reported	Type 2 diabetes; first-time diabetic foot ulcer	Semi-structured face-to-face interviews	18
Chithambo (2015) ³⁴	United Kingdom	Diabetes foot clinic	To explore patients' reasons for delay in seeking help with diabetes-related foot problems	6	4 males, 2 females	49–69 y	Type 1 (n = 1) or type 2 (n = 5) diabetes (duration of 8 mo–49 y); presenting with gangrenous ulcers and/or requiring partial/full lower limb amputation	One-to-one semi-structured interviews	21
Coelho (2009) ³⁵	Brazil	Referral service for chronic diseases	To understand the social representations of the diabetic foot for people with type 2 diabetes	10	4 males, 6 females	53–77 y	Type 2 diabetes (duration of 7–41 y); DFU status not specified	Focus groups; semi-structured interviews	13
de Vera (2003) ³⁶	United States	Pascua Yaqui reservation	To describe the perspectives of Yaqui native Americans with diabetes regarding biomedical and traditional methods for healing foot ulcers	4	1 male, 3 females	58–76 y	Non-insulin-dependent diabetes; healed (n = 3) or active (n = 1) diabetic foot ulceration	Participant observation, semi-structured interviews, field notes	21
Delea (2015) ³⁷	Ireland	Prosthetic rehabilitation outpatient unit	To explore the attitudes and experiences of foot care services in Ireland among people with diabetes and active foot disease or lower limb amputations. Explore what service users believe are the positive and negative aspects of the care they have received and the ways in which services could be improve	10	10 males	40–72 y	Type 1 (n = 4) and type 2 (n = 6) diabetes; active diabetic foot disease in both feet (n = 1), transibial amputation as a result of diabetes (n = 6), transfemoral amputation as a result of diabetes (n = 3)	Semi-structured interviews	20
Foster (2014) ³⁸	United States	Suburban community	To explore the lived experience of patients who have had an amputation resulting from a diabetic foot ulcer	15	10 males, 5 females	<60 y (n = 2), 60–64 y (n = 3), 65–69 y (n = 6), 70–74 y (n = 1), 75–79 y (n = 2), 80–84 y (n = 1)	Diabetes; amputation as a result of diabetic foot ulcer [toes (n = 9); transmetatarsal (n = 5); below-knee (n = 5); above-knee (n = 5)]	Semi-structured face-to-face interviews	18

TABLE 1 (Continued)

First author (year of publication)	Country	Recruitment setting	Aim	Sample size	Gender	Age	Disease status	Method of data collection	CASP score (/24)
Fox (2005) ³⁹	Canada	Wound management clinic	To explore the experiences of people with a diabetic foot ulcer in order to acquire a better understanding of their needs and to develop recommendations for improving support	10	6 males, 4 females	40–70 y	Diabetes (duration of 5–25 y); diabetic foot ulceration (duration of 8 mo–18 y)	Semi-structured face-to-face interviews	13
Gale (2008) ⁴⁰	United Kingdom	Suburban primary care health Centre	To explore beliefs about diabetic foot complications and everyday foot self-care practices among people with type 2 diabetes	18	9 males, 9 females	Mean age = 64 y	Type 2 diabetes (mean duration of 6.5 y); no history of diabetic foot ulceration	Semi-structured face-to-face interviews	17
Guell (2015) ⁴¹	Barbados	Two public polyclinics	To explore barriers to foot care from the perspectives of health care professionals and patients, with a view to informing further work to develop effective interventions	9	Not reported	Not reported	Diabetes; range of experiences with foot disease (from no known diabetic foot disease to amputations)	Semi-structured face-to-face interviews	18
Hill (2015) ⁴²	United Kingdom	Podiatry clinic	To determine the patient Education approach that individuals with diabetes Mellitus were exposed to, as well as exploring patient perceptions and the impact of foot health	20	Not reported	> 18 y	Type 1 or type 2 diabetes (for at least 18 mo)	Semi-structured face-to-face interviews	17
Hjelm (2002) ⁴³	Sweden	Specialised multidisciplinary diabetic foot clinic	To explore beliefs about health and illness in patients with diabetic foot ulcers investigated from a patient perspective	39	23 males, 16 females (11 males, 12 females aged <65 y; 12 males, 6 females aged >65 y)	23–83 y	Diabetes (duration of 5–55 y); current/previous diabetic foot ulcer	Focus groups	17
Hjelm (2002) ⁴⁴	Sweden	Specialised multidisciplinary diabetic foot clinic	To ascertain patients' evaluations of a specialised multidisciplinary diabetic foot clinic and its contribution to an improved coping capability to promote health in the patients receiving care	39	23 males, 16 females (11 males, 12 females aged <65 y; 12 males, 6 females aged >65 y)	23–83 y	Diabetes; (duration of 5–55 y); current/previous history of diabetic foot ulceration	Focus groups	21
Hjelm (2003) ⁴⁵	Sweden	Two hospital-based diabetes clinics	To explore beliefs about health and illness among foreign-born and Swedish diabetic men with severe diabetic foot lesions that might affect their self-reported self-care	26	26 males [Swedish-born (n = 11); foreign-born (n = 15)]	38–74 y	Diabetes (duration of 5–55 y); current/previous diabetic foot ulceration	Focus groups (Swedish-born participants); semi-structured face-to-face interviews	16

TABLE 1 (Continued)

First author (year of publication)	Country	Recruitment setting	Aim	Sample size	Gender	Age	Disease status	Method of data collection	CASP score (24)
Hjelm (2009) ⁴⁷	Sweden	Diabetic foot clinic	practice and care-seeking behaviour To elucidate how diabetic patients with limb-threatening foot lesions perceive and evaluate content and organisation of treatment in a multi-place hyperbaric oxygen chamber	19	13 males, 6 females	44–83 y	Diabetes (duration of 9–52 y); non-healing longstanding diabetic foot ulcers; receiving hyperbaric oxygen chamber treatment	(foreign-born participants) Focus groups	17
Hjelm (2013) ⁴⁶	Uganda	Surgical ward of a university hospital	To explore beliefs about health and illness among Ugandans with diabetic foot ulcers that might affect self-care and care-seeking behaviour	14	4 males, 10 females	40–79 y	Diabetes (duration of 1–18 y); active diabetic foot ulceration (duration of 1–4 y)	Semi-structured face-to-face interviews	19
Johnson (2005) ⁴⁸	United Kingdom	Hospital-based diabetic foot clinics	To investigate how patients and professionals view the role of advice in diabetes foot care in order to inform educational practice	15	9 males, 6 females	30–70+ y	Type 1 (n = 7) or type 2 (n = 8) diabetes; diabetes-related foot complications	Semi-structured face-to-face interviews using a vignette technique	16
Johnson (2006) ⁴⁹	United Kingdom	Hospital-based diabetic foot clinics	To identify and discuss patient and health professional views of the use of therapeutic footwear for people with diabetes-related foot complications	15	9 males, 6 females	30–70+ y	Type 1 (n = 7) or type 2 (n = 8) diabetes; diabetes-related foot complications; long-term experience of foot care services	Semi-structured face-to-face interviews using a vignette technique	16
Kinmond (2003) ⁵⁰	United Kingdom	Diabetic foot clinic	To address the lack of research relating to both psychosocial health-related quality-of-life issues for patients living with diabetic foot ulceration and the limited number of studies that reflect patients' perspectives	21	15 males, 6 females	Mean age = 58.9 y	Non-insulin-dependent (n = 8) or insulin-dependent (n = 13) diabetes (6 mo–27 y in duration); active diabetic foot ulceration	Semi-structured interviews	18
Marchand (2012) ⁵¹	France	Diabetes Centre of a university hospital Centre	To investigate whether there are cognitive factors that act as barriers to the implementation of foot-related preventive and curative behaviours by persons with diabetes at risk of foot complications	30	30 males	Mean age = 63.8 ± 7.9 y	Type 2 diabetes (mean duration of 17.2 ± 8.9 y); history of previous chronic foot ulcer (lasting more than 3 wk) that occurred and healed at least 1 y prior to the start of the study [recurrence in previous 12 mo (n = 17); no recurrence in previous 12 mo (n = 13)]	Concept maps and semi-structured face-to-face interviews	17

TABLE 1 (Continued)

First author (year of publication)	Country	Recruitment setting	Aim	Sample size	Gender	Age	Disease status	Method of data collection	CASP score (/24)
Matwa (2003) ⁵²	South Africa	Diabetic clinic in a rural hospital	To explore and describe the experiences and foot care practices of diabetic patients who live in the rural areas of Transkei	15	10 males, 5 females	30–74 y	Diabetes (duration of at least 6 mo); with or without foot complications	In-depth face-to-face interviews	19
McPherson (2002) ⁵³	United Kingdom	Diabetic foot clinic	To examine the perceptions of patients with diabetes regarding their chronic foot ulcers	4	4 males	Not reported	Type 1 diabetes; receiving treatment for foot ulcer for at least 6 mo	Focus group	17
Moreira (2010) ⁵⁴	Brazil	Recruited through participation in previous research	To comprehend individuals with diabetes' experiences when dealing with a podological complication in their being-in-the-world	8	Not reported	18+ y	Diabetes; diabetic foot ulceration with or without amputation	Face-to-face interviews	17
Nancarrow (2003) ⁵⁵	Australia	Podiatry services within the Australian Capital Territory	To identify the pathways that led to amputation or ulceration and the consequences of foot complications on the individual and the carer	13	Not reported	Not reported	Diabetes; diabetic foot ulcer or amputation in previous 6 mo	In-depth interviews	10
Parry (1996) ⁵⁶	United States	Urban orthopaedic limb care outpatient clinic serving low-income population	To examine health beliefs and actions relating to the care of plantar ulcers in African Americans with type 2 diabetes	20	7 males, 13 females	<40 y (n = 2), 40–50 y (n = 4), 50–60 y (n = 7), 60–70 y (n = 7)	Type 2 diabetes; undergoing treatment for diabetic foot ulceration	Open-ended interviews	12
Paton (2014) ⁵⁷	United Kingdom	National Health Service podiatry clinics	To explore the psychological influences and personal experiences behind the daily footwear selection of individuals with diabetes and neuropathy	4	2 males, 2 females	58–84 y	Diabetes (duration of 8–20 + y); peripheral neuropathy; history of foot problems (ranging from blisters to minor amputation); supplied with therapeutic insoles/footwear at least 6 mo previously	Semi-structured face-to-face interviews	18
Ribu (2004) ⁵⁸	Norway	Community (recruited through home care nurses)	To enhance understanding of the patient's perspective of living with lower-extremity ulcers and diabetes	7	4 males, 3 females	21–83 y (median = 70 y)	Type 1 (n = 1) or type 2 (n = 6) diabetes; one or more leg or foot ulcers (duration of 8 wk–9 y) [Charcot foot (n = 2); amputated leg (n = 1)]	Semi-structured face-to-face interviews	16

TABLE 1 (Continued)

First author (year of publication)	Country	Recruitment setting	Aim	Sample size	Gender	Age	Disease status	Method of data collection	CASP score (24)
Ribu (2004) ⁵⁹	Norway	Community (recruited through home care nurses)	To explore the nursing care experienced by patients with diabetes who have a foot and/or leg ulcer/illuminate the experiences of patients with diabetic foot and/or leg ulcers in order to clarify their needs	7	4 males, 3 females	21–83 y	Type 1 (n = 1) or type 2 (n = 6) diabetes; foot or leg ulcer (duration of 6 mo–6 y) [foot ulcer (n = 4), leg ulcer (n = 2), foot and leg ulcer (n = 1)]	Semi-structured face-to-face interviews	13
Searle (2005) ⁶⁰	United Kingdom	Outpatient podiatry clinics	To explore the experience of foot ulceration and treatment from both the perspective of both patients and podiatrists	13	9 males, 4 females	45–66 y	Type 1 (n = 5) or type 2 (n = 8) diabetes (3–47 y in duration); active diabetic foot ulceration	Semi-structured interviews	15
Searle (2008) ⁶¹	United Kingdom	Large health Centre serving inner-city population	To explore the psychological and behavioural factors that may influence both the incidence of chronic wounds and their progression	Study 1: 18 Study 2: 26	Study 1: 9 males, 9 females Study 2: 17 males, 9 females	Study 1: Mean age = 64 y Study 2: Mean age = 67 y	Study 1: Type 2 diabetes; no history of diabetic foot ulceration Study 2: Type 1 (n = 8) or type 2 (n = 18) diabetes; presenting with a first-time ulcer or new episode of ulceration	Semi-structured face-to-face interviews	13
Vedhara (2012) ⁶²	United Kingdom	Specialist podiatry services in secondary care	To qualitatively evaluate a psychological intervention designed to modify the psychosocial risks associated with foot re-ulceration in individuals with diabetes	8	6 males, 2 females	56–81 y	Type 1 (n = 2) or type 2 (n = 6) diabetes; discharged with a healed diabetic foot ulcer in previous 12 mo	In-depth qualitative interviews conducted at the end of the first 10 wk of the intervention and again following the final maintenance session	16
Watson-Miller (2006) ⁶³	Bermuda	Wound care unit and general surgical wards	To explore participants' experience with diabetic foot ulceration in Bermuda	6	3 males, 3 females	28–66 y	Diabetes; diagnosed with diabetic foot ulceration	Unstructured interviews	16
Wong (2005) ⁶⁴	Australia	Two small communities in the Torres Strait and Northern Peninsula Area District	To achieve a better understanding of the perspectives and needs of indigenous people with diabetes in the Torres Strait and to identify ways to promote successful self-management of diabetes	67	26 males, 41 females	30–70+ y	Diabetes; no information on DFU status	Focus groups (n = 67) and/or individual interviews (n = 30)	15

CASP, Critical Appraisal Skills Programme; DFU, diabetic foot ulceration; GP, general practitioner.

TABLE 2 Qualitative synthesis: Themes, sub-themes, and inclusion in papers

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
Personal understandings of DFU	Identity	Limited awareness of what constitutes DFU	Q: <i>How would you describe a foot ulcer? What is it?</i> A: <i>Well, I don't ... I'm not really sure to be honest. I couldn't describe it, not really. No, I'm not entirely sure what they are talking about, how to describe it.</i> (Searle et al., 2008, p. 85)	28,31,34,40,61
		Lack of knowledge regarding DFU appearance	<i>I never knew I had an ulcer, because I didn't know what they looked like. I thought: "It's a bit of numbness." It [foot] was a tiny bit red, I thought it was nothing much to really go to the doctor about. So I just hung on.</i> (Beattie, Campbell & Vedhara, 2014, p. 434)	
	Cause	Limited understanding of link between diabetes and DFU	<i>It never occurred to me sort of that it was diabetic related, really as far as I was concerned. As I said just got this hurt or this thing on my foot the same way you might have a mosquito bite that goes septic or whatever. You might bang into something and you got a bruise, something like that. So I really didn't think it was gonna be something serious.</i> (Chithambo & Forbes, 2015, p. 23)	24–26,31,34–37,40,43,45,46,51,52,56,61,64
		Belief that DFU is because of poor circulation alone	Interviewer: <i>Why do you think it is that diabetes can affect the feet?</i> Participant: <i>The circulation goes, doesn't it? Well, I think it's the circulation. Because you do get like...I have got some, some of my toes, I haven't got much feeling in...</i> (Gale et al., 2008, p. 558)	
		Culturally specific beliefs regarding DFU	<i>But let me warn you. Never leave your nails lying around, the witches use nails to make people develop ulcers.</i> (Matwa, Chabeli, Muller & Levitt, 2003, p. 16)	
	Timeline	No history of ulceration: DFU as acute condition	Interviewer: <i>What do you think could happen if for instance you cut your toe on something sharp?</i> Participant: <i>Well, I would expect it to just heal up again I think. Obviously you'd need to sort of keep an eye on it, keep it checked, you know.</i> (Gale et al., 2008, p. 559)	32,36,39,40,43–46,51,52,55
		History of ulceration: DFU as chronic condition	<i>When I saw it I didn't think at all I just got mad...I felt sick...it begins with a little ulcer and at the end it will be a whole toe... it will never hea... I am in pain...</i> (Hjelm, Nyberg & Apelqvist, 2002a, p. 676)	
	Consequences	Low perceived risk for DFU	<i>I was aware that one can have foot ulcers but not that I could be affected because I have always tried to use correctly-fitting shoes.</i> (Hjelm, Nyberg & Apelqvist, 2003, p. 7)	23–28,30,31,33–36,39,40,42–48,51–54,56,58,60–64
		Belief that DFU only occurs in acute cases	Q: <i>What sort of thing can it [infected foot wound] lead to?</i> A: <i>I would imagine if it was left long enough, gangrene and loss of either toe, or worse, your foot. So, um, I mean I think it would have to be very bad for that to happen but that is sort of the worst case scenario, then.</i> (Searle et al., 2008, p.84)	
		Judge others who develop DFU	<i>I always keep my appointments, but like I say, if he thinks "Oh, it looks alright", and he gets infection in it, it's his fault, it's his problem.</i> (Johnson, Newton, Jiwa & Goyder, 2005, p. 330)	
		Belief that DFU will heal without medical intervention	<i>I did not care about it because I had experienced a similar one before, which disappeared by itself. I thought this one would be so.</i> (Abu-Qamar & Wilson, 2012, p. 39)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Realise seriousness of DFU too late	<i>[T]his nail that you always see in pictures or journals for diabetic people and so on, it is ridiculous... until you get a wound... then you understand what it is... you have to see what happens. (Hjelm, Nyberg & Apelqvist, 2002a, p. 676–7)</i>	
		Fear of amputation	<i>You're always, in the back of your mind, saying that one day you're going to lose the foot or they're going to amputate the foot. That's a big one always playing in the back of your mind. (Fox, 2005, p. 108)</i>	
	Controllability	Low perceived control over DFU occurrence	<i>I'm taking better care of my feet than I've ever done, and I'm still getting ulcers... sometimes your best isn't good enough, it'll happen anyway. I feel that the ulcers are defeating me and whatever I do, I feel like it's a lost cause. (Beattie, Campbell & Vedhara, 2014, p. 432)</i>	23–26,28–31,33–48,51,52,55–58,60–62,64
		Sense of hopelessness	<i>... like cancer, nobody gets completely cured. I am told that this (gangrenous left big toe) is caused by diabetes. All the people who had this thing never survived...cutting my leg will not change anything... (Matwa, Chabeli, Muller & Levitt, 2003, p. 16)</i>	
		Uncertainty regarding the future	<i>Are my feet going to go black? That's one of my worries. Are my toes going to go black, and I'll have to have them off? (Searle et al., 2005, online publication)</i>	
		Negative outlook on future	<i>"The future is not promising at all...having a dog leading you and having a stick and a wheelchair...those are complications you can get from diabetes...I am very worried... you get very scared...It is the fact that you know that you can get such wounds although you try to prevent it". (Hjelm, Nyberg & Apelqvist, 2003, p. 11)</i>	
Preventing DFU: Knowledge, attitudes, and behaviours	Foot self-care knowledge, engagement, barriers, and motivators	Knowledge of appropriate foot self-care	<i>Wear proper foot wear, when you have a shower make sure to check under your foot for cuts or anything like that, have your nails trimmed regularly. Rub moisturizing cream on your foot to make sure there are no rashes or dry skin. (Wong et al., 2005, p. 175)</i>	24–48,51–53,55–58,60–62,64
		Recognise importance of foot self-care	<i>Well, the bottom line, really, has always been cleanliness and I think that's very important where feet are concerned and particularly diabetic feet as well. So yes, that rates as very important to me. And I think that if people made the stipulation that they spent 10 minutes every day doing their feet it would save an awful lot of problems. (Gale et al., 2008, p. 558)</i>	
		Know to seek medical assistance if foot injury occurs	<i>Yes, any sore or cut you get, you should go straight to the Health Centre for dressing. It is very important. (Wong et al., 2005, p. 175)</i>	
		Practice of appropriate foot self-care	<i>I wash my feet daily, I keep my nails short, ensure no injury is inflicted on the skin while cutting nails I put on cotton socks to reduce moisture and always keep spaces between toes, I clean and dry them. (Hjelm & Beebwa, 2013, p. 127)</i>	
		Limited knowledge of appropriate foot self-care	<i>... the only thing I have been told is that I have to rub them [the feet] and to wipe them. I have not been given any advice. (Hjelm, Nyberg & Apelqvist, 2002b, p. 70)</i>	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Low perceived need for foot self-care	Interviewer: <i>Do you sometimes put your hands inside your shoes to make sure there's nothing loose in there?</i> Participant: <i>No, I don't, that's the sort of thing I never think about, to be honest.</i> Interviewer: <i>No? Or that there's no grit inside them?</i> Participant: <i>Well, if there's grit, surely you can feel it, of course.</i> (Gale et al., 2008, p. 560)	
		Inconsistent engagement in foot self-care	<i>It's a load of old tosh isn't it? What would I want to check them [feet] every morning for?</i> (Gale et al., 2008, p. 560)	
		Difficulty accepting diabetes	<i>What happened was, about 5 or 6 years ago, I did something really stupid. I peeled some skin off the bottom of my foot. I knew I was diabetic, that's real stupid...It went into complete sepsis, and, oh man, was I sick, but denial was the biggest problem with me.... You know, you think you can get away with cheating a bit with your food intake or your insulin or not taking your medications.</i> (Fox, 2005, p. 107)	
		Lack of cues to action	<i>Complacency sets in, yes... Diabetes is, if I break my arm, you can see that, put it in plaster and watch out but you can't see diabetes. So a broken arm, leg, you can see these things. But if it's in your blood, you can't see, feel or do anything. You have a tendency not to care about it so much, because it isn't actually a pain in the leg, it's not actually a toothache or an earache.</i> (Burnside et al., 2007, p. 20)	
		Of lower priority than other aspects of diabetes self-management	<i>I've been told at the surgery [that foot care was very important] but I hadn't sort of... you know how they go on about, they go on about your diet, they go on about your cholesterol, they go on and you think, "Oh it's just another thing", you know.</i> (Gale et al., 2008, p. 557)	
		Physical and cognitive limitations	<i>It's difficult for me because at the moment am having treatment because my eyes have gone bad as well, since I have been in hospital. Am partially sighted so I can barely see so it's difficult to try and look to see if I have any marks, it's not easy, so you know it's difficult.</i> (Chithambo & Forbes, 2015, p. 22)	
		Education in foot self-care from health professionals	<i>You pick up lots of different advice from lots of different people, you know... (podiatrist) may well tell you about you socks being, you know "wear your socks inside out"...</i> (Johnson, Newton, Jiwa & Goyder, 2005, p. 329)	
		Becoming empowered through foot care education	<i>I learnt that you've got to really take care of your feet, and you've really got to do what you're told. I mean, I've had ulcers and things like that for many years and, you know, that's it. But if I hadn't got one, I never used to bother so much. I didn't have the knowledge I've got now to make sure they [feet] don't get bad. I think it was well worth it, and even old me learnt a lot from it [intervention].</i> (Vedhara et al., 2012, p. 329)	
		Assistance in foot care by family members	<i>By myself, not very capable [at performing foot hygiene], with my companion completely capable.</i> (Marchand et al., 2012, p. S139)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Provision of advice by family members	<i>The sons used to say to me, "take care mum. It [diabetes] has effects on the feet."</i> (Abu-Qamar & Wilson, 2011, p. 33)	
		Sense of personal responsibility	<i>....at the end of the day it's me who's responsible for my feet...</i> (Vedhara et al., 2012, p. 330)	
		Prior experience as wake-up call	<i>I've lost this leg...I protect my foot because I don't want to lose another one.</i> (Beattie et al., 2014, p. 435)	
		Learning from experiences of others	<i>[At the hospital there was] a man in a wheelchair. And he'd lost from his knees down. And [my son] said to me "and that's how you'll end up with your diabetes". And I think it registered in my mind. If you don't take care, you know that fear's there in the background all the time.</i> (Searle et al., 2005, online publication)	
	Views on therapeutic footwear	Uncomfortable	<i>The shoes they make are too heavy and are no good to me, but I can't make them understand that.</i> (Bradbury & Price, 2011, p. 28)	27–30,32,41,43,45,49–51,53,55,57,60
		Expensive	<i>I have two pairs of them [diabetic foot wear] and they are expensive. I bought them 350 dollars [Barbadian; equivalent to USD 175] for a pair. You understand? So 700 dollars for two pairs of shoes.</i> (Guell & Unwin, 2015, p. 330)	
		Concerns that prescribed footwear will put feet at risk	<i>I'm petrified that when I start wearing them out [new orthotic shoes] it's going to start rubbing my feet.</i> (Beattie, Campbell & Vedhara, 2014, p. 433)	
		Restrict activities	<i>But um it's... it's... cumbersome I think is the way to describe it, it's cumbersome to walk in, it's very heavy to walk in, you can't walk great distances... especially if you are walking on anything that's any other than flat.</i> (Burton, 2007, p. 20)	
		Unattractive	<i>...there are a lot of hidden illnesses that you don't see and to end up with a clumsy boot, which is an ugly boot, you automatically focus on it.</i> (McPherson & Binning, 2002, p. 201)	
		Cannot wear preferred choice of clothing	<i>I used to wear floaty dresses. How can you put a floaty dress on and wear that? The other shoe I've got looks like a policeman's shoe.</i> (Beattie, Campbell & Vedhara, 2014, p. 436)	
		Draw unwanted attention	<i>[T]here were ever so many in Church that didn't know I was a diabetic, until I started wearing this big shoe; you don't want to broadcast it!</i> (Johnson, Newton & Goyder, 2006, p. 170)	
		Undermine femininity	<i>I went to a wedding on Sunday and had to wear trainers. I don't feel confident when I go out because I'm so used to dressing up in skirts, tights and high-heeled shoes. I can't wear them at all now.</i> (Ashford, McGee & Kinmond, 2000, p. 153)	
		Intentional non-adherence	<i>I think I'd rather continue with a small open wound that doesn't close, than having to wear some God forsaken shoe. I could wear trousers, but I like to wear skirts more...I'd rather live with my little ulcer and keep having dressings weekly than wear that shoe.</i> (Beattie, Campbell & Vedhara, 2014, p. 436)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Functional value outweighs aesthetic concerns	<i>If I didn't have shoes that I could wear and walk around in I couldn't function.</i> (Paton, Roberts, Bruce & Marsden, 2014, p. 19)	
	Taking risks	Intentionally ignore foot care advice	<i>They said you should really always wear shoes or slippers. Naughty girl that I don't.</i> (Gale et al., 2008, p. 560)	27–30,32–34,37,39,40,45,46,48–50,52,53,56–58,60–62
		Intentionally wear inappropriate footwear	<i>I forced my feet [into shoes] and then I went outside for 5 hours. Next day she [his wife] looked at my feet and said there were blisters, very big blisters. So it's my own mistake...</i> (Kinmond, McGee, Gough & Ashford, 2003, p. 10)	
		Intentionally walk barefoot	<i>I am told that I shouldn't walk barefoot. Walking, even from the bedroom to the bathroom without shoes on is bending the rules. But I do it very, very carefully... It's the only little risk I take.</i> (Beattie, Campbell & Vedhara, 2014, p. 435)	
		Poor adherence to advice on resting ulcerated foot	<i>I've been told the ulcer on my foot would probably heal a lot quicker if I didn't walk. Now so what? What am I gonna do, sit in a chair all day? I mean, it's not so much quantity of life it's quality...</i> (McPherson & Binning, 2002, p. 200)	
		View that foot care impinges on lifestyle	<i>I know what the answer is: if I get an ulcer... you keep your feet up. But again to do that, it's very awkward because you have still got to live.</i> (Searle et al., 2005, online publication)	
		Taking strategic risks to maintain lifestyle	<i>It is basically up to me. I notice that the more I sit still and the more I follow the advice I am given, the quicker it heals. But... you can't both sit and get everything done, too.</i> (Ribu & Wahl, 2004a, p. 63)	
		Difficult to maintain appropriate behaviours in the long term	<i>Having healed for me is the main thing... It's also keeping it up. At the moment it's still quite new and exciting. But I suppose you can get used to it and not take as much care.</i> (Beattie, Campbell & Vedhara, 2014, p. 436)	
	Preferences for foot care education	Value of providing written information	<i>Q: Do you think it is best that information is given in writing, in leaflets, or are there other ways you can think of?</i> <i>A: Both actually, verbal and writing, because I do feel sometimes you don't have time to read it and you misplace it, you know, you can't find it.</i> (Searle et al., 2008, p. 85)	26,31,41,42,61,62
		Inclusion of graphic images of DFU	<i>I greatly believe that it has to be graphic, people have to see what can happen to their feet if they don't take precautions.</i> (Burnside et al., 2007, p. 22)	
		Value of group-based interventions	<i>You need to hear other people that have had problems, diabetic foot problems. Ulcers they've had in the past, okay they've come through but they've had that experience, they know about these things. Listening to the other members, you know, where things haven't been quite right, we've all had it.</i> (Vedhara et al., 2012, p. 328)	
		Importance of reinforcing foot care education	<i>It [follow-up] was very good for reinforcing everything we had heard, learnt. You do get out of good habits. I think just an occasional reminder about what we are doing and why we are doing it.</i> (Vedhara et al., 2012, p. 327)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Need for general information on diabetes as well as foot care	<i>You've got to talk about diabetes, you've got to talk about medication, about what you eat. If you're going to talk about foot ulcers one relates to the other.</i> (Vedhara et al., 2012, p. 327)	
		Reluctance to attend foot care education	<i>Q: But there are sorts of meetings... A: Yeah, but I wouldn't come [...] Q: So you don't think it would give you anything? A: I don't think I'd learn any more than what I already know isn't it, because it's a common sense thing isn't it in the end.</i> (Searle et al., 2008, p. 85)	
		Barriers to attendance	<i>Sometimes I get a bit on edge if I go to the hospital, with the waiting and that, you know.</i> (Burnside et al., 2007, p. 22)	
Views on health care experiences	Dissatisfaction with foot care provided	Foot examinations not routinely performed	<i>Researcher: Since being diagnosed in the 1980s, when you visited the doctor, were your feet examined, that is, did the doctor inspect the soles? Abu-Salem: No, no, no. Researcher: No examination! So you mean that foot examination took place after the burn injury? Abu-Salem's wife: Yes. Abu-Salem: After this accident.</i> (Abu-Qamar & Wilson, 2011, p. 32)	23–26, 30, 32–34, 37, 38, 40–56, 58, 59, 61
		Limited advice on foot care	<i>When I first got diabetes, my GP said you've got to be careful with your feet, and I said why? He said because it can affect your feet. That was all really. He said the nerves might go but he didn't say very much more about it, except be careful with your feet.</i> (Chithambo & Forbes, 2015, p. 22)	
		Lack of attention to feet undermines perceived importance of foot self-care	<i>I would say, actually, if I'm honest with you, the feet side of things is something that always gets ignored. If your doctor and your nurse don't prioritise it, why should you?</i> (Gale et al., 2008, p. 560)	
		Inconsistencies in care provided	<i>They put dressing on it, and they gave me cream and they said you have to come to the outpatients clinic tomorrow. I was surprised they did not admit me as an emergency case. Next day, I came to see Dr. Saleem, who is the plastic surgeon; he got upset. He said you have infection, you need hospitalization.</i> (Abu-Qamar & Wilson, 2012, p. 40)	
		Dissatisfaction with care in hospital	<i>To me, that room was a disease, there was nobody to talk to, for God's sake. It was like a dead place. I stayed in there for nine days, and for me it was like a year, a year! That is no place for a person to be...</i> (Moreira & Sales, 2010, p. 899)	
		Sense of mistrust	<i>I finished with the private doctors. "Cause I realised they were taking away my money and tellin' me that my feet is gettin' better and then I end up in the hospital.</i> (Guell & Unwin, 2015, p. 380)	
		Acknowledge limited availability of personnel and resources	<i>They're doing the best they can with what they've got I say... It's just trying to get the government to put more money in I say and that'd be hard.</i> (Delea et al., 2015, p. 255–6)	
		Financial costs associated with foot care	<i>The wound has made me very poor, I expected help from health care staff, especially drugs and regular glucose monitoring, but nothing was given to me... I was advised to</i>	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
			<i>constantly check my blood glucose but it is not possible... each time you check that is money I don't have.</i> (Hjelm & Beebwa, 2013, p. 127)	
		Accessibility issues	<i>At the emergency health care centre they instructed me to schedule an appointment with the vascular doctor. I went to the city hall during lunch break and waited there for some time. I was close to crying I was in so much pain. I was able to schedule an appointment, but I remember that the employee responsible for the scheduling told me that the city bus that takes the patients to the appointment was full.</i> (Moreira & Sales, 2010, p. 900)	
	Positive views on specialist services	Preferred to general practitioner care	<i>I just think they [diabetes specialist nurses] know more, more than what the doctors know, and they know every crook and cranny, whereas your doctors, working on a general principle, whereas they are working, specialising... and they're friendly, more like a family basis...</i> (Johnson, Newton, Jiwa & Goyder, 2005, p. 329)	23–25,29,31,37–44,46–48,53,55,61,64
		Regular appointments provide reassurance	<i>I manage my toes... I go to X [chiropodist] so if I recognise that something is wrong, she will take care of it... it is better to let the expert manage it... it gives a great sense of security to know that you can visit chiropodists.</i> (Hjelm, Nyberg & Apelqvist, 2002a, p. 677)	
		Limited access to specialist services	<i>When the podiatrist saw me she said, "Who cuts your toenails?" I said "I do it myself", and she said, "You shouldn't do it", I said "Well I do it myself because you never come to see us". That's why I lost my toe. You got to come and see us more often.</i> (Wong et al., 2005, p. 175)	
	Dissatisfaction with patient-provider communication	Poor communication	<i>They talk to you like they're talking to kids; they talk down to you half the time. They don't explain things, they just come around [saying] "Well you'll have to have this done and that" and then go away. They don't explain things to you.</i> (McPherson & Binning, 2002, p. 202)	23–26,29,32,34–40,43,44,46,47,50,52–54,56,59–61,63
		Rushed appointments	<i>It was very brief, very brief. Here you are, have an antibiotic, go away. As if, I mean whether she didn't think it was much either I don't know but she certainly gave the impression of not being concerned about it. Didn't want to refer it anywhere. I just went away, thank you for your prescription, goodbye.</i> (Chithambo & Forbes, 2015, p. 24)	
		Insensitivity regarding need for amputation	<i>"... he came into me one morning - into the ward and he says, I'm going to take your leg off... He just frightened the life out of me... He didn't even introduce himself at all. Shock!"</i> (Delea et al., 2015, p. 254)	
		Lack holistic view of patient	<i>The nurses came in and they had a job to do, and you know, it was basically the foot and I'm not just a foot... It was hard to deal with and there was really no psychological support... There was no acknowledgement that your whole life has been affected.</i> (Fox, 2005, p. 109)	
		Do not appreciate impact of DFU	<i>I know Dr. X, when he says, "Go home and rest", that is the answer, but there are certain other things you have got to do as well, you know, like earn a living!</i> (Searle et al., 2005, online publication)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Underestimate seriousness of condition	<i>I kept going to my GP and I kept asking them you know, do I need to go to the hospital? And they kept saying no, no it's fine, we just give you antibiotics, just come to the nurse. And it just got worse and worse and worse.</i> (Chithambo & Forbes, 2015, p. 24)	
		Paternalistic nature of patient-provider relationship	<i>It's that syndrome again, you're a human being but you sit there and you've got a number and everybody else talks right over the top of your head. They don't give a thought to the fact that you might have a brain cell of your own.</i> (Searle et al., 2008, p. 88)	
		Passivity in health care encounters	<i>They probably can't do any more. I have received the care they can give me for the wound, I assume... so I trust what has been done.</i> (Ribu & Wahl, 2004b, p. 67)	
	Desire for more holistic care	Importance of good rapport	<i>They do know what they are doing and, at least those who have been here and whom I have experienced, have been very pleasant and seem very interested in progress taking place in the treatment and that it is going better and such. So, that is I guess what I would have said, yes, that they are not just like that, that they come and change the dressing and then leave, that there are other things that go with it and such.</i> (Ribu & Wahl, 2004b, p. 67–68)	29,37,39,43–48,54,58,59,61
		Interest in emotional as well as physical well-being	<i>There was one nurse... she sat with me and gave me comfort. Now that is something that you cannot get with swallowing a pill.</i> (Bradbury & Price, 2011, p. 30)	
		Importance of empathy, understanding, and open communication	[Description of ideal physician/nurse] <i>Attending to my problems, discussing them, listening and being keen to listen to me, diagnosing and taking measures, being easy to talk to, being able to give and take information as well as being highly skilled in medicine... and creating a gentle and positive attitude.</i> (Hjelm, Nyberg & Apelqvist, 2002b, p. 71)	
Development of DFU and actions taken	Pathways to DFU	DFU because of burn injury	<i>At night, I put my toe on the radiator...in the morning there was a cavity...my toe was swollen and hurt.</i> (Abu-Qamar & Wilson, 2011, p. 37)	23–25,27,28,34–36,39,43–46,48,50–53,55
		DFU because of inappropriate footwear	<i>One of the doctors had said that she should wear sneakers to support her feet. Because she didn't sleep she was walking and pacing and that's when the sneakers actually rubbed and caused the ulcer.</i> (Nancarrow & Devlin, 2003, p. 198–9)	
		DFU because of foot injury	<i>I scratch with my nails but I go too far, then it bleeds, it makes it sore.</i> (Marchand et al., 2012, p. S136–7)	
		DFU because of failed self-treatment of wound	<i>I do not know its name; it is one of those ordinary creams. After using it, it caused infection, my toe blackened and the infection started to spread to other parts.</i> (Aliasgharpour & Nayeri, 2012, p. 31)	
	Discovery of DFU	Numbness in feet delays discovery	<i>I had trodden on a nail...I didn't recognise it until in the evening when I was taking off my shoe and my stockings were stained with blood...</i> (Hjelm, Nyberg & Apelqvist, 2002, p. 676)	23,34,37,39,43–45,47,50,51,53,60,62
		Discovery by family members	<i>I did not feel anything, my sister in law told me that my leg was swollen.</i> (Abu-Qamar & Wilson, 2012, p. 38)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Shock and anger on discovery	<i>When I saw it I didn't think at all, I just got mad...I felt sick...</i> (Hjelm, Nyberg & Apelqvist, 2002, p. 676)	
		Surprise at speed of deterioration in condition of foot	<i>What is scaring is...that it (the previous time) went so extremely fast...after two days they established that they had to amputate the feet.</i> (Hjelm, Löndahl, Katzman & Apelqvist, 2009, p. 1982)	
	Decisions regarding DFU treatment	Delay in seeking medical attention	<i>It started out as a little scratch...so I didn't attend to it as urgently as I should have. I went away to the Caribbean for 3 weeks instead of going to the doctor to get it attended to... By the time I got back [to Canada], the foot had swollen to about twice the size.</i> (Fox, 2005, p. 107)	23,25,27,28,31,33–36,38,39,43,45–47,52,56,64
		Lack of pain leads to underestimation of seriousness of foot wound	<i>I had these enormous blood blisters on the bottom [of] each foot... [I thought]: "I'll just keep an eye on these for now", because I wasn't getting any pain. I treated them [with] antiseptic wiping... and left it for so long. I didn't feel it was bad enough for me to be panicking over it.</i> (Beattie, Campbell & Vedhara, 2014, p. 434)	
		Self-treatment of DFU	<i>I do not know its name; it is one of those ordinary creams. After using it, it caused infection, my toe blackened and the infection started to spread to other parts.</i> (Aliasgharpour & Nayeri, 2012, p. 31)	
		Religion/prayer to heal wound	<i>I had cracked feet since 1993. I used prayer and my cracked feet came okay from prayer. This is my inner secret.</i> (Wong et al., 2005, p. 175)	
		Culturally specific treatments for DFU	<i>If it were not for my "inyanga" [traditional healer] I would not be talking to you now. So if it was diabetes, why didn't the doctor help it, and yet a black man did?</i> (Matwa, Chabeli, Muller & Levitt, 2003, p. 16)	
Wide-ranging impacts of DFU	Physical impact	Pain	<i>The wound started on a toe...and went to affect the whole foot and the leg. It was so painful that it would not allow me to move...</i> (Hjelm & Beebwa, 2013, p. 126)	27–30,32,36–39,43–47,50–55,58,60–63
		Reduced mobility	<i>When you stop to think about it you could just get up and go and now you can't; you're restricted; you have to take care not to knock your leg; you have to be careful that you don't tread on anything that you know is on the ground.</i> (Kinmond, McGee, Gough & Ashford, 2003, p. 10)	
		Sleep disturbances	<i>I had to lie a certain way, had to lie on my right side and then I had to place the leg parallel on top and then I lay on my side like that, then I wasn't in pain, but when I twisted my foot like that, it was so damn painful, excuse me... it was so awful that I had to stand up, I couldn't manage to lie down like that, had to get on the floor, sit on the edge of the bed, and move the leg.</i> (Ribu & Wahl, 2004a, p. 62)	
		Cyclical pattern of healing and recurrence	<i>Another operation... debride it, cleaned it all out... form that day onwards I've spent three Christmases out of five in there... all with the same problem... it goes all right and then it gets a build-up.</i> (Burton, 2007, p. 18)	
		DFU care is time-consuming	<i>I'd have to go in and inform work that I'd need every Monday [to] finish at 3 o'clock, or every Wednesday I wouldn't be in until 11 o'clock so I could get to the clinic...</i> (Beattie, Campbell & Vedhara, 2014, p. 435)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		DFU care dominates life	<i>Your foot controls your everyday workings... well, controls your life, really, your feet, doesn't it?</i> (Searle et al., 2005, online publication)	
	Social and vocational impact	Lifestyle restrictions	<i>It means a disrupted lifestyle for however long it takes for that to mend. You have to start altering your life to that then.</i> (Beattie, Campbell & Vedhara, 2014, p. 435)	23,25–30,32,35,37–39,43–46,50–53,55,56,58,60,63
		Leisure activities curtailed	<i>I used to be a field sports person and now [pause] I can't walk far.</i> (McPherson & Binning, 2002, p. 199)	
		Difficulty in fulfilling social roles	<i>You know you miss the things you do with your grandchildren... I mean his other nan took him to feed the ducks and things. And it choked me because I thought, well, I should be doing that as well.</i> (Kinmond, McGee, Gough & Ashford, 2003, p. 10)	
		Social isolation	<i>In the middle of all of this, I have become so isolated. If I did not have this [ulcer], I would get out more, and not sit inside so much and ponder and think.</i> (Ribu & Wahl, 2004a, p. 62)	
		Stigma associated with DFU	<i>I think it's just one of those things that you don't particularly want to discuss with friends... I think some people associate ulcers with being a nasty, smelly old wound...</i> (Beattie, Campbell & Vedhara, 2014, p. 434)	
		Loss of employment	<i>Because I was in the building industry wearing steel toe-capped boots, the consultant said, "You've got to pack the job in". Well, I said, "What am I going to do?" "I don't know", he said, "but you can't go back wearing those boots".</i> (McPherson & Binning, 2002, p. 200)	
		Financial hardship	<i>Oh 100 grand... lost income. The wife works and I have a few bob stashed away, financially these episodes cost you... Keeping a house running costs money and I have nothing coming in and everything going out.</i> (Nancarrow & Devlin, 2003, p. 196)	
	Psychological impact	Anxiety	<i>I get anxious, worried, it [DFU] really does take over my life. Because I immediately start to think of things I can't do...Just walking out to the kitchen, it's simple things like standing [to put the kettle on].</i> (Beattie, Campbell & Vedhara, 2014, p. 433)	25,27–30,32,35–39,43–48,50,53,54,57,58,60,62,63
		Reduced quality of life	<i>I think I have poorer quality of life...one doesn't have the energy any longer.</i> (Hjelm, Nyberg & Apelqvist, 2002a, p. 676)	
		Loss of self-esteem	Interviewer: <i>Do you think it affects your self-esteem?</i> Patient: <i>Oh, I think so.</i> Interviewer: <i>In what way?</i> Patient: <i>I don't know... you feel down all the time I think... gets you a bit depressed I suppose at times, and I just don't want to bother.</i> (Searle et al., 2005, online publication)	
		Altered sense of self	<i>My wife goes out and gets the benefits as the major income earner, with me being at home tying up loose ends. It was hard for me to get adjusted because I didn't feel like it was my place. And to tell you the truth, I'd rather be working.</i> (Fox, 2005, p. 108)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Anger and frustration over loss of independence	<i>I've lived on a shelf for 3 years. I've really run out of kind thoughts and patience. You know it's okay [for the clinic] to say "Come back in a month," ...and I'm still stuck like a bug on a pin. That's how it feels: living without living.</i> (Fox, 2005, p. 108)	
		Sense of powerlessness	<i>You get frustrated when you sit around like that, you feel powerless, everything becomes so heavy.</i> (Ribu & Wahl, 2004a, p. 62)	
		Depressed affect	<i>I've just been like a zombie. With no interest.</i> (Bradbury & Price, 2011, p. 42)	
		Guilt and self-blame	<i>...that's my punishment, I was trying to do my life and pretend I wasn't diabetic.</i> (Beattie, Campbell & Vedhara, 2014, p. 433)	
		Regret over not looking after feet better	<i>... how could I know the possibility of facing such miseries? ... if I have controlled it, this would have been different.</i> (Aliasgharpour & Nayeri, 2012, p. 32)	
		Sense of acceptance	<i>It gets easier because you're adjusted to it, you've got a problem and you've got to get through it...</i> (McPherson & Binning, 2002, p. 201)	
		Positive outlook	<i>[I]t will be fine again... my wishes are now when it has been stabilized that I will be able to live a rather good life anyhow.</i> (Hjelm, Nyberg & Apelqvist, 2002b, p. 73)	
		Perceived benefits	<i>I think differently...Often when you have gone through something, something serious... often you become a stronger person... you can look forward in another way.</i> (Hjelm, Nyberg & Apelqvist, 2003, p. 7)	
	Sources of support and impact on relationships	Emotional support from friends and family	<i>Whenever I'm feeling peaked, I call a close friend of the family who is 90 years old. She always tells me what to do for me and my children and it makes us better.</i> (Parry, Mobley & Allen, 1996, p. 270)	23,27–30,36–39,43–47,50,53,55,56,58,60,62,63
		Practical support from friends and family	<i>If anything is worrying me I know I can ask my wife or my daughters to have a look at my feet. Most friends are very good. If [names wife] got a problem picking me up from work, they [will] pick me up.</i> (Beattie, Campbell & Vedhara, 2014, p. 434)	
		DFU care from community health services	<i>And under my heels I have fissures...the health care staff over there [district nurse and home care staff at service apartments] rub my feet with ointment every day.</i> (Hjelm, Nyberg & Apelqvist, 2002a, p. 677)	
		Alternative sources of support	<i>Whenever I'm not feeling up to anything, I call my children or church members and they come and see about me.</i> (Parry, Mobley & Allen, 1996, p. 270)	
		Support from fellow DFU patients	<i>Oh I get on very well with the other diabetic I know down at the [hospital]. I know quite a few, because we do see each other on a Tuesday or Friday or whatever. We know all, and we all have the same bad shoe treatment like the little flat sandal with the things that flap over the top. We've all had ulcerated toes.</i> (Searle et al., 2005, online publication)	
		Sense of being a burden on others	<i>Ulcer has caused me lots of problems because I am now totally dependent on other people who look on me as a burden.</i> (Hjelm & Beebwa, 2013, p. 127)	

TABLE 2 (Continued)

Themes (third-order constructs)	Sub-themes	Key concepts (translated second-order constructs)	Illustrative quotations from participants (first-order constructs)	Studies that included subthemes
		Strained relationships with family members	<i>My children are helping me all the time. My wife cannot sleep. In the night-time I call her two or three times... My whole family is suffering.</i> (Kinmond, McGee, Gough & Ashford, 2003, p. 12)	
		Reluctant to discuss experiences with others	<i>It's not a fun subject. I wouldn't really burden my friends with it [DFU]...when I was worried most about it I didn't talk to anyone too much...</i> (Beattie, Campbell & Vedhara, 2014, p. 434)	
		Insufficient support provided	<i>If they wanna ring, the phone's there. I mean I ain't gonna spend hours and hours talking to them every day of the week, but it ain't going to change the fact that they never done it, and I can't see them starting it now.</i> (Searle et al., 2005, online publication)	
		Others underestimate seriousness of DFU	<i>The family and friends, no they didn't understand at all. "He might be having it on". My sister she was like: "Oh, he's just sitting around... sat around with his foot up in the air"... My boss said: "You've got a sore foot, that's all it is". You just can't explain, they don't know, it's ignorance again.</i> (Beattie, Campbell & Vedhara, 2014, p. 434)	

DFU, diabetic foot ulceration; USD, United States Dollar; GP, general practitioner.

complacent about their feet.^{24,31,35,43,44,48,58} As one of several self-management practices required of people with diabetes, foot self-care was often considered of lower priority than more immediate demands (eg, taking medication, monitoring blood sugar).^{26,41,61} Physical and cognitive limitations, such as poor eyesight,^{34,35,43} problems remembering,^{26,33,40,61} or difficulty reaching feet,^{26,35,51,64} also posed challenges in performing foot self-care unaided. Factors that appeared to motivate engagement in foot self-care included receipt of education and/or training from health professionals,^{25,31,33–35,37,42,43,45,46,48,51,55,57,61,62} which empowered participants to look after their feet.^{26,37,41,43,45–48,51,62} Family members were also pivotal in promoting foot self-care by providing advice^{23,24,33,35,43,46,51,55,56,61} and practical assistance.^{23,29,34–36,43–45,62,64} Having a greater sense of personal responsibility for one's feet appeared to encourage more proactive care.^{26,35,36,39,41,43,45,51,52,61,62} Personal experience of foot complications^{28,30,31,35,39,43,45,46,57,58,61,62,64} often served as a “wake-up call”²⁸ to initiate positive behavioural changes, although knowing or observing others who have experienced DFU or amputation had a similar effect.^{33,38–40,52,56,60–62,64}

Therapeutic footwear views and practices

Many individuals expressed frustration with wearing prescribed footwear and other orthotic devices,^{27–30,32,49,50,53,57,60} which were found to be expensive^{30,41,43,45,55} and uncomfortable.^{28–30,32,49,55,60} Some experienced such pain and discomfort that they feared they were putting their feet at

increased risk of DFU.^{28,29,32,49} Others reported severely restricted lifestyles.^{32,51,53,57,60} The bulky, unattractive appearance of therapeutic footwear was also remarked upon^{27,28,30,32,43,49,53,57,60} as it prevented people from wearing their preferred choice of clothing^{27,28,32,49,50,60} and drew unwanted attention.^{28,32,49,53,57} Female participants described how the “diving boot”-like⁵⁷ appearance of their footwear impacted their sense of femininity^{27,28,49,50,57,60} and self-confidence,^{27,50,60} particularly on social occasions. These factors led many individuals to intentionally defy therapeutic footwear guidelines,^{28,32,49,53,57,60} although for some, their functional value ultimately outweighed any aesthetic concerns.^{32,43,49,57}

Taking risks

Participants across studies admitted to taking chances with their foot health. Many purposely ignored foot self-care advice,^{27,28,33,37,39,45,48,56,62} while others knowingly engaged in hazardous behaviours such as wearing inappropriate footwear,^{27–29,40,46,49,50,57,60,62} walking barefoot,^{28,40,46,52,62} and disregarding instructions to rest the ulcerated foot.^{30,48,50,53,58,60,61} This was especially the case when recommended actions impinged on everyday activities, with participants taking strategic risks to maintain as normal a life as possible.^{28,30,32,34,39,45,48–50,53,57,58,60,62} Even those who did adhere to foot care recommendations acknowledged that they might struggle to do so in the long term.^{28,62}

Preferences for foot care education

Attitudes towards foot care education were generally positive, where explored.^{42,61,62} Four papers examined participants' preferences concerning the form this education should take.^{26,31,61,62} The value of providing information that was clear, practical, and positively framed,^{26,31} preferably in the form of leaflets that could be taken home and kept for reference,^{26,31,61} was emphasised. Although it was acknowledged that the inclusion of graphic images of foot ulcers could induce fear,^{26,31} some felt this was necessary to motivate behavioural change.³¹ Views were mixed regarding whether foot care education should be provided on an individual or group basis. Individuals who took part in Vedhara and colleagues'⁶² intervention were receptive to its group-based format, which provided them with the opportunity to share with and learn from others; conversely, most participants in Burnside and colleagues' study³¹ expressed a preference for one-to-one sessions. With regard to timing, some believed education should be provided shortly after the diagnosis of diabetes,^{31,42} although the value of further sessions to reinforce learning was highlighted.^{42,62} Participants in two studies suggested that general information on diabetes should be provided before focusing on foot care.^{31,62} Some individuals admitted they were unlikely to attend foot care education despite being aware of its importance.^{31,61} Barriers to attendance included work and child care commitments, mobility issues, financial constraints, and a dislike of hospitals as a venue.³¹

3.4.3 | Views on health care experiences

Participants across studies expressed dissatisfaction with elements of their health care experiences regarding DFU and voiced a desire for more holistic care.

Dissatisfaction with foot care provided

It was widely reported that health professionals often neglected to examine participants' feet^{24–26,40,56,61} and failed to provide^{24,25,32,34,37,42–46,48,51,53,55,61} or reinforce^{33,34,42,53,61} advice on foot care, which limited knowledge of appropriate behaviours and undermined their perceived importance.^{40,61} Many inconsistencies were noted in the foot care received from different health professionals and services,^{23–26,44,47,48,55,56,59} which resulted from a lack of continuity in staff,^{44,55,56,59} poor co-ordination between services,^{44,59} and confusion over the division of responsibility for different aspects of care.^{44,47} These inconsistencies diminished participants' confidence in the quality of care provided^{23,48,55} and delayed referral to appropriate services in some cases, resulting in adverse consequences such as amputation.^{23,25,55} Furthermore, many expressed dissatisfaction with the care they received while hospitalised for DFU.^{25,44,54,55} Such disappointing experiences led to feelings of mistrust^{23,26,41,48,55,56,59} and the questioning of health professionals' knowledge and expertise,^{44,48,52,55,56,59}

although they were sometimes attributed to health care underfunding and the limited availability of personnel and resources.^{37,44,59} The financial burden of foot care-related expenses was frequently mentioned,^{23,30,37,38,41,43–46,52,53,55} particularly the cost of travel to and from health care appointments.^{30,37,38,52,53} In some instances, government assistance covered costs such as medical supplies,^{30,41,55} appointments,^{30,37,45} and prescribed footwear.⁵⁵ Inadequate access to appropriate health care was widely experienced^{23,24,37,38,45,46,54,55,58} because of issues such as geographical location^{23,24,37,46,52} and limited mobility.^{37,44}

Positive views of health professionals with expertise in foot care

Health professionals with specific expertise in foot care (eg, podiatrists, diabetes specialist nurses) were generally held in high regard,^{23,24,29,31,37–40,43,44,46–48,53,61} and the care they provided was often preferred to that of general practitioners and other doctors.^{29,42,48,53} Regular appointments with such professionals provided reassurance,^{40,43,44,46,48,61} but the availability of such services was often limited.^{29,37,40,41,43,44,46,55,64}

Dissatisfaction with patient-provider communication

Health professionals' communication with participants regarding DFU and foot care was widely considered to be poor.^{26,37,39,40,47,53,54,56,59,61,63} In particular, individuals who underwent diabetes-related amputation often remarked on the insensitivity of consultants in disclosing their need for this procedure.^{37,39,53,54} Appointments were frequently rushed^{29,34,36,47,52,59} or consisted merely of providing medication without discussion.^{24,25,34} Many health professionals appeared to lack a holistic view of their patients,^{39,50,54,59} failing to develop a good rapport^{40,56,59} or provide emotional support.^{29,39,53,54,59} Participants often felt that their health care providers did not appreciate the impact of DFU and foot care demands on their everyday lives^{25,26,39,50,53,54,60,63} and tended to underestimate the seriousness of their condition, paying little heed to their concerns.^{34,38,40,54,61} This delayed the diagnosis of conditions such as peripheral neuropathy⁴⁰ and receipt of appropriate treatment,^{23,34,54} sometimes resulting in prolonged hospitalisation³⁴ and even amputation.³⁸ Many commented on the paternalistic nature of their relationships with health professionals^{26,35,40,44,53,54,59,61,63}; some described being reluctant to ask questions^{32,43,44,60,61} or deliberately withheld information from them.²⁶ This appeared to encourage passivity in health care interactions and undermined participants' role as active self-managers of their condition.^{40,43,44,46,54,59,61}

Desire for more holistic care

Among participants who reported positive health care experiences, health professionals who made an effort to develop a good rapport^{37,44,46,47,54,59,61} and took an interest in their emotional as well as physical well-being^{29,43,44,46,47,58,59}

were praised highly for their supportive interactions. Many emphasised the importance of empathy, understanding, and open communication in health care contexts,^{37,39,44–48,54,58,59,61} which helped foster a sense of trust^{39,48,59,61} and made them more inclined to follow advice.⁴⁵

3.4.4 | Development of DFU and actions taken

Participants across papers described the circumstances leading to the discovery of a foot ulcer and their choices regarding its treatment.

Pathways to DFU

Factors preceding DFU included burn injuries^{23,28,34} often incurred through unsafe behaviours (eg, applying a hot water bottle,^{34,52} putting feet too close to a heat source,^{23,34} bathing feet in boiling water²³), skin damage caused by inappropriate footwear,^{25,27,34,39,44,45,50,55} experiencing a cut or sore on the foot^{25,27,34,39,43–46,51,53,55} that was self-inflicted in some instances through scratching^{46,51} or peeling skin off the foot,³⁹ and failed attempts to self-treat such wounds.^{25,27,28,52}

Discovery of DFU

Reduced sensation from peripheral neuropathy increased susceptibility to foot injuries^{51,53} and delayed their detection.^{23,34,43–45,53,62} Ulcers were often discovered incidentally by family members.^{23,50,53,62} Feelings of shock^{37,44,60} and anger^{43–45} were often experienced on their discovery, particularly when amputation was required,^{37,60} and many expressed surprise at how rapidly their foot's condition deteriorated.^{34,39,47}

Decisions regarding DFU treatment

Participants often failed to seek medical attention immediately for DFU,^{23,25,33,34,38,39,45,46,56} waiting days or even weeks before attending a health professional and usually only when it had worsened significantly^{23,34,39} or at the behest of family members.^{23,33} Reasons for delay included underestimating the potential seriousness of the ulcer (especially if reduced sensation meant that little pain was experienced^{28,34,46,56}) or expecting it to heal by itself.^{23,34,46} Individuals in two studies who injured their feet while on holiday decided to wait until returning home to seek medical attention.^{34,39} Many participants opted to treat the ulcer themselves before seeking medical intervention.^{23,25,27,28,34–36,39,45,46,52,56} Others used prayer to heal their wounds.^{36,45–47,64} Some participants reported using alternative treatments specific to their culture (eg, witch doctors, herbal remedies).^{36,43,45,46,52,56}

3.4.5 | Wide-ranging impacts of DFU

Several physical, social, vocational, psychological, and interpersonal consequences of living with DFU were reported

across papers, which had significant and enduring impacts on participants' independence, participation, and well-being.

Physical impact

Many participants experienced significant pain^{27,29,30,32,36,43–46,50,52,54,58,60–63} and reduced mobility^{27,29,30,32,38,39,46,50,51,58,60} as a result of ulceration, which had a negative impact on well-being. Some stated that amputation would be preferable to enduring the intense pain they experienced.^{29,60} Sleep disturbances were also common.^{27,29,30,43,44,46,58} Prolonged healing times were frequently reported,^{36,39,46,60,63} with some entering into a cyclical pattern of DFU healing and recurrence.^{32,39,45,55} Caring for the ulcerated foot was very time consuming, with multiple appointments to attend^{28,30,47,50} that often necessitated travelling long distances.^{37,38,47,53,55} Indeed, many felt that DFU care had taken over their lives.^{39,43,45,50,51,60,63} Additional diabetes self-management responsibilities^{39,46} were often hampered by reduced physical activity levels resulting from DFU.^{39,58}

Social and vocational impact

Disrupted lifestyles because of restrictions in daily activities were widely reported,^{27–30,32,38,39,43–46,50,51,53,55,58,60,63} with many being unable to bathe or shower,^{27,30,50,53} drive a car,^{29,32,50,55,63} or go shopping^{30,55} unassisted. Activities often had to be planned in advance^{30,58}; in some cases, the medical care necessitated by DFU dictated where participants could spend their holidays.^{30,39,58} Leisure activities were often severely curtailed or abandoned altogether.^{30,32,39,43,45,50,51,53,58} Some struggled to fulfil their expected social roles as parents or grandparents because of ulceration.^{27,39,50,53} Social isolation was often experienced as a result of such lifestyle restrictions.^{28–30,39,46,50,58,60} The stigma of ulcers was frequently mentioned,^{28,30,35,38,46,53,63} as was embarrassment at their appearance^{25,30,53} and odour^{30,46,63}; some feared rejection from loved ones.^{38,46,52} Participants across studies experienced loss of employment or were forced into early retirement by DFU,^{27,30,32,38,39,43,45,46,50–53,55,56,58,60} especially those whose work put their feet at risk (eg, standing for extended periods, wearing steel-capped boots).^{30,53} This resulted in financial hardship for many.^{27,32,38,39,43,45,46,50,53,55} Individuals who remained working reported decreased productivity,³⁰ dependence on fellow employees to maintain work performance,⁴³ and workplace discrimination,⁵² although those who were self-employed had greater flexibility in their working conditions.⁵³

Psychological impact

Many participants experienced anxiety as a result of their ulceration.^{27,28,30,36–39,43–47,50,53,54,60,63} Fears of prolonged healing,⁶³ causing further damage to the foot,^{27,29,57,58,60} and DFU recurrence^{28,30,36,47} were expressed in addition to

fear of amputation (Section 3.4.1), resulting in an enhanced sense of vulnerability^{27,29,54} and loss of social confidence.^{27,50,60} Fear of becoming dependent was also common.^{28,43–45} Living with DFU and the restrictions it imposed often resulted in reduced quality of life,^{27,29,30,32,43,45,46,50,53,60} loss of self-esteem,^{27,30,35,39,46,60} and an altered sense of self.^{32,50,54} In particular, being unable to provide for one's family had a negative impact on participants' self-esteem and sense of identity.^{30,39,46,50,60} Many expressed anger and frustration at the loss of independence they experienced.^{29,30,39,50,58,60,63} Others felt a sense of powerlessness.^{38,39,43–45,50,54,58,63} Negative or depressed affect was common^{28–30,32,43,46,50,60} and often accompanied by a lack of energy and motivation.^{29,43,58,60} Participants frequently experienced guilt and self-blame for their foot problems^{27,28,35,37–39,48,50,58} and expressed regret over not looking after their feet better.^{25,28,35,38,48} Nonetheless, many learned to accept their DFU^{29,32,43–45,53} and maintained a positive outlook,^{29,39,44,62} which helped them to cope better with the challenges it posed. Perceived benefits of their experiences included having greater appreciation of the seriousness of their condition,⁴³ feeling closer to their partner,³⁰ becoming a stronger person,⁴⁵ developing greater patience,³⁰ and receiving better medical care.⁴⁵

Sources of support and impact on relationships

Family members were an important source of emotional^{27–29,36–39,53,55,56,63} and practical^{23,27–30,36,37,45,46,50,55,58,60,63} support in dealing with DFU, taking on tasks participants were no longer able to perform.^{27,29,30,43,50,55,58,60,63} Some individuals, particularly those who were older, relied on community health services for ulcer management.^{29,30,36,43–45,47,55,58,59} Other sources of support included church members,^{36,56} community workers,^{36,38,40} and fellow DFU patients.^{47,56,60,62} Although support from family members was greatly appreciated, participants often experienced the sense of being a burden because of their increased dependence on others.^{27–30,46,50,55,58,63} Altered roles within the family also placed a strain on relationships.^{27,29,30,39,43,45,46,50,53,55,63} Some participants were reluctant to discuss their experience of DFU with loved ones^{28,39} or interfere with their lives and activities.³⁰ Others received insufficient support from friends and family,^{36–38,60} whom they felt underestimated the seriousness of DFU and its impact.^{28,43,45,58}

4 | DISCUSSION

To the authors' knowledge, this detailed and comprehensive meta-synthesis is the first to explore patients' perspectives on DFU and foot care and makes a valuable contribution to the growing body of research on this important but often neglected complication of diabetes. Five overarching themes are described that move beyond the results of individual

qualitative studies and add to our understanding of how people with diabetes perceive and experience this condition.

From this meta-synthesis and other sources (eg,^{8,11,15}), it is clear that patients' understanding of DFU and its prevention is currently lacking. Our findings indicate that participants in the included studies did not simply have a deficit of knowledge but, rather, had alternative interpretations of DFU at odds with medical explanations of this condition, which had a significant influence on their behavioural choices. The beliefs we identified correspond with the five core dimensions (identity, cause, timeline, consequences, controllability) of the common sense model of health and illness behaviour (CSM).⁶⁵ The CSM offers a useful framework for exploring how patients' perceptions of a particular health condition may influence their cognitive, emotional, and behavioural responses and has been successfully applied to a wide range of medical conditions,⁶⁶ including diabetes.⁶⁷ The present findings further indicate the potential utility of this model in guiding health care interactions and developing interventions to enhance patients' understanding of this condition and encourage foot self-care.^{2,8}

In line with previous research,^{8,11–14} engagement in preventive foot care was generally quite limited across studies because of a variety of personal and environmental barriers. Our findings indicate that an individualised, rather than “one-size-fits-all”, approach to education in foot self-care based on discussion of patients' beliefs, preferences, and life circumstances may be the most effective in producing behavioural change. Our meta-synthesis found that individuals were particularly unlikely to partake in foot protective behaviours if they impinged on their lifestyles, and many knowingly engaged in risky activities in order to maintain some sense of normality. This underlines the need for foot care recommendations that strike a balance between preserving foot health and maintaining patients' independence.

Education alone may not be sufficient to influence behaviour if individuals lack confidence in their ability to perform foot self-care. Interventions that aim to promote engagement by improving self-efficacy could result in greater and longer-lasting behavioural change.⁸ Self-management interventions enhance patients' ability and confidence to manage long-term conditions (LTCs) effectively by providing education, training, and support to develop their knowledge, skills, and both internal and external resources.⁶⁸ Their utility in improving clinical and psychosocial outcomes^{69–71} and reducing health care costs⁷² among people with LTCs including diabetes^{73,74} has been widely demonstrated. Self-management interventions specific to diabetic foot care hold significant promise.^{75,76}

It is apparent from our findings that individuals with diabetes do not feel adequately supported by their health professionals either medically, educationally, or emotionally in looking after their feet, which undermines the purpose and necessity of preventive foot care. There are several possible

reasons for this. First, health professionals are already under time pressure to provide basic care to patients with such complex health needs; additional resources may be required to provide adequate foot care and education.⁷⁷ Second, many health professionals lack training in the provision of education on foot self-care and are unfamiliar with consensus guidelines on treating the diabetic foot⁷⁸ and may thus lack awareness of what constitutes best practice. Central to the issues that have emerged from this meta-synthesis is the need for more effective communication and greater partnership building within health care interactions relating to DFU in accordance with national and international guidelines that prioritise patient-centred care and shared decision-making.^{8,79} Satisfaction with patient-provider communication is associated with better understanding of diabetes,⁸⁰ self-care,⁸¹ and related health outcomes.⁸² In addition, research indicates that people with diabetes desire more involvement in decision-making around their condition,⁸³ which is linked with greater adherence to diabetes self-management.^{81,84} Involving individuals with diabetes to a greater extent in decision-making regarding DFU, as well as family members who play an important supportive role as this review shows, may encourage them to become informed and empowered managers of their own foot health.⁸

The findings of this meta-synthesis also highlight the need for the improved implementation of recommended guidelines regarding the prevention and management of foot problems in people with diabetes. Optimal care requires not only medical management of DFU but also screening, education, and surveillance. This will be most effectively provided in an integrated health care system with multidisciplinary input. Indeed, increased availability of multidisciplinary diabetic foot care has a dramatic impact on DFU and amputation rates.⁸⁵ However, the findings of this review indicate that many individuals with diabetes still have insufficient access to such services, and those who do often encounter inconsistencies in care with potentially hazardous consequences. The growing emphasis on DFU prevention and management in international policy^{8,9} is welcome but should be complemented by greater investment in health care resources and improved co-ordination across the various pathways of care to tackle this issue effectively.

Ulceration had wide-ranging physical, social, vocational, psychological, and interpersonal impacts on the lives of those affected that were significant and enduring in nature. The findings of this meta-synthesis highlight the importance of providing individuals living with ulceration or the threat of recurrence with psychosocial support in dealing with its impact on everyday life.^{2,62} Preliminary findings from Vedhara and colleagues' group-based intervention for those at risk of re-ulceration⁶² indicate the potential benefits of utilising peer support. However, barriers to attendance identified in the present review need to be addressed in the development and delivery of such programmes and suggest that a

“one-size-fits-all” approach may not be optimal. In addition, vocational retraining and return-to-work interventions may prove valuable given the significant impact that loss of employment has, both emotionally and financially, on individuals with DFU.

4.1 | Strengths and limitations

While the present meta-synthesis highlights important findings, certain limitations should be acknowledged. First, although a qualitative methodological filter was used to refine our search, poorly labelled studies may have been unintentionally omitted. Greater investment in the consistent and appropriate indexing of qualitative research in electronic databases is urgently required.¹⁷ Second, articles were limited to peer-reviewed publications in English; eligible studies reported in other languages and publication types may have been excluded. Third, significant heterogeneity in sociodemographic and DFU-related characteristics, both between and within study samples, make it difficult to gauge the applicability of findings to wider populations. Finally, all included studies provided data at one time point only; longitudinal research is required to examine changes in perspectives on DFU and foot care over time.

5 | CONCLUSION

Investment in DFU prevention and management is key to reducing health care expenditure on complications of diabetes.^{5,9} This meta-synthesis offers valuable insights into what it means to have, or be at risk of, ulceration and demonstrates the complexity of issues influencing the behavioural choices of individuals with diabetes regarding their feet. The findings have significant implications for health professionals, researchers, and policymakers regarding health care delivery and the development of interventions to effectively promote engagement in foot care in this patient group and provide appropriate supports for those living with ulceration.

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APPENDIX: SAMPLE SEARCH STRATEGY FOR MEDLINE (OVID) DATABASE

Limiters:

- English language
 - Humans
1. exp diabetic foot/
 2. (diabet*).tw
 3. (foot OR feet).tw
 4. 2 and 3
 5. 1 or 4
 6. Interviews as topic/ or interview/ or focus groups/ or narration/ or exp qualitative research/
 7. (qualitative* or ethnograph* or phenomenol* or ethnonurs* or (grounded and theor*) or (purposive and sample) or hermeneutic* or heuristic* or semiotics or (lived and experience*) or narrative* or (life and experience*) or (cluster and sample) or (action and research) or (observational and method) or (content and analysis) or (thematic and analysis) or (constant and comparative and method) or (field and stud*) or fieldwork or (field and work) or (key and informant) or (theoretical and sample) or (discourse and analysis) or (focus and group*) or interview* or discussion* or (ethnological and research) or ethnomethodolog* or (mixed and method*) or (mixed and model*) or (mixed and design*) or (multiple and method*) or multimethod* or triangulat*).tw
 8. 6 or 7
 9. 5 and 8