

Education, Research Barriers and Solutions to the Implementation of Best Practice in Diabetes-related Foot Care, Footwear and Wound Care: A Qualitative Inquiry

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Abstract: Clinicians providing diabetes-related skin and wound care face complex barriers associated with patients' access and funding for foot care and footwear. We sought to understand the barriers and solutions to the delivery of best practices in wound care.

Key words: *education, diabetes mellitus, foot care, footwear.*

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We conducted a qualitative survey study of clinician perceptions in Northern Manitoba and Ontario, Canada using a semi-structured question and an open-ended survey. We sought the perspectives of clinicians regarding barriers and solutions when providing foot care, footwear and wound care services related to diabetes. We framed this study within the Chronic Care Model. Study letters of information and Informed consent were provided. Participants (n=48) completed open-ended survey questions focused on diabetes services. Survey data was thematically analyzed to identify leading themes and meanings; no incentives were given for completion of the survey.

Participants were deeply concerned about the overall health of patients living with diabetes (diabetes status, blood pressure, nutrition choices, glycemic control, smoking) and indicated gaps in client, family/caregiver knowledge related to foot care and footwear that affected health decision-

making. Culturally relevant education was recommended related to foot care and footwear. In addition, participants: 1) emphasized the need for health-care professionals to be respectful, take time to study and understand the communities and peoples' knowledge, opinions, and cultural values in care settings in which they practice; 2) discussed the financial burden patients experience when they need preventative foot care and footwear services (lack of finances dedicated to foot care and footwear is further complicated when patients develop diabetes-related foot complications such as foot ulcers and complex Charcot foot) and 3) acknowledged the need for leadership from health-care organizations to support increased education on foot care and footwear, including implementation of diabetic foot screening.

Despite considerable progress in foot care, footwear and wound care related to persons living with diabetes mellitus, significant challenges remain. Health-care professionals are in key

roles to provide their experience and solutions to the delivery of services. Clinicians struggle to effectively deliver the care they know is necessary to support patients living with diabetes, and at risk of foot complications. Future care should include foot screening for risk stratification by front-line clinicians, funded foot care and footwear and culturally relevant, community-based education for patients and their families.

Background

Diabetes mellitus (DM) prevalence in Canada is of significant concern. Eleven million (1 in 3 Canadians) have diabetes or prediabetes and 1.7 million persons have undiagnosed diabetes. The estimated prevalence for prediabetes over 20 years is projected to increase from 22.1% (2015) to 23.2% in 2025.^{1,2} These statistics are concerning as they are associated with diabetes-related complications such as cardiovascular disease and hypertension, kidney disease, mental health issues, retinopathy, neuropathy, limb loss and premature death. Of these, diabetic foot ulcers are one of the most feared complications.^{3,4} Individuals with foot ulcers (wounds) experience physiological changes (neuropathy, infection, reduced mobility, and possible amputation) and psychological issues related to stress, anxiety and depressive symptoms. These factors may further contribute to changes in employment status, leisure and family dynamics.⁵⁻⁹

It is estimated that 15–25% of people with diabetes will develop a foot ulceration in their lifetime.² The economic costs of diabetic foot ulcers or ulcer reoccurrence are well documented.¹⁰ In Europe, the costs associated with the treatment of diabetic foot ulcers are estimated to be 10 billion Euros per year.^{11,12} According to the American Diabetes Association, in the United States, the annual per-patient costs for patients with diabetic foot ulcers are approximately \$US 13,700.¹³ In Canada, the estimated annual costs of diabetic foot ulcers are \$547 million.¹⁴ One-third of amputations are conducted on persons with a reported diabetic foot ulcer (2011/2012 data)²; and the costs of amputations to health systems are 10 to 40 times greater than the

cost of implementing effective initiatives to prevent amputation.⁹ Finally, persons undergoing amputation are at a high risk of mortality, greater than some cancers.¹¹

Prevention is the Cornerstone

The International Diabetes Federation (IDF, 2020) recommends that prevention of foot complications, foot ulcers and amputations is possible through preventative patient-centred/family education, conducting individualized patient risk assessments by a multidisciplinary team and through early and aggressive treatment and management of the identified risk factors.⁹

Diabetes Canada (2018) recommends self-management education and daily foot care and examination of the feet, legs and nails.² In Canada, when compared to other Commonwealth countries, only 52% of patients with DM received an annual professional foot exam in the previous year.¹⁵ Though clinical practice recommendations exist related to foot care and footwear, there remain gaps in the implementation of these recommendations in clinical practice.²

For patients and caregivers, self-management education includes learning how to conduct a daily foot exam, carrying out daily foot care, knowing where and to whom to report any foot changes and understanding the need for professional foot care and fitted footwear.² For clinicians, a comprehensive foot examination includes assessment of structural abnormalities, peripheral arterial status and testing for the loss of protective sensation and the presence of neuropathy.^{2,9}

Study Aim

Understanding barriers and solutions to the delivery of foot care, footwear services and wound care from the perspective of health-care professionals is crucial. They can provide a realistic perspective of barriers and solutions. The goal of this study was to explore barriers and solutions to the delivery of foot care and footwear care from the perspective of health-care professionals who deliver this care as part of their role.

Theoretical Framework

The theoretical framework guiding this study was the Chronic Care Model as it aims to improve health-care practices and health outcomes.^{2,16,17}

Method

A qualitative, descriptive survey approach was used as it aims to describe participants' experiences and everyday occurrences in practical terms.¹⁸⁻²¹ Using this approach, health-care professionals' perspectives were sought while attending a regional wound care educative event focused on the prevention, assessment, treatment and management of diabetes-related wounds. Each workshop participant received a research Letter of Information and Informed Consent explaining the study and an open-ended survey they could voluntarily complete. In the survey, participants were asked to describe, in detail, barriers and solutions to the delivery of patient-centered foot care and footwear services in their practice setting. Key themes emerged from the rich data collected using thematic analysis.

Sampling and recruitment: Participants were recruited from a regional wound care conference (2018). The conference was focused on the prevention, assessment, treatment and management of diabetes-related skin and wound care issues. Conference participants were health-care professionals from a large Canadian city and from rural, remote and/or isolated communities.

Data collection: Participants were asked to describe barriers to the delivery of best practices in foot care and footwear, and to identify solutions to support the delivery of best practices in foot care and footwear. Prior to the study, the open-ended questions were piloted for feasibility by two experienced community-based foot care nurses.^{20,21}

Ethical considerations: Ethical approval for the study was received from the Research Ethics Board at St. Lawrence College, Ontario. Informed consent was obtained. Workshop attendees did not have to participate, and they did not have to return the survey if they chose not to.

Data analysis and rigour: Following standard practice, the open-ended survey data was typed verbatim and checked for accuracy (NVivo V11). Data was reviewed and checked by a second researcher to ensure study data was true to survey descriptions. Responses and issues described by health professionals in private and non-private practice were similar and therefore thematically analyzed together. The survey data was coded and read several times and verified by a third researcher. Through thematic analysis relevant themes emerged.

Study limitations: This is a small sample of health-care professionals that practice across diverse settings.

Results

A total of 48 participants returned the survey (48/130; 37% response rate - see Table 1). Survey participants were from Manitoba and Ontario and 23 participants identified as practicing in rural and remote care settings. They identified as registered nurses (24/48), nine had designation as a Foot Care Nurse (FCN)[†] or focused their education practice on diabetes care, or as a nurse specialized in wound, ostomy and continence care. As well, 14 practical nurses had FCN designation. Podiatrists (2/48), physiotherapists (2/48) and an occupational therapist were present (5 participants were undesignated). Thirteen participants self-identified as being in private practice. Upon reading the data, the researchers included the data from the private practice participants in the thematic analysis as their responses were the same as participants in non-private practice.

Participants' professional roles varied widely and were evenly distributed across health-care settings. Eleven (11/48) participants practised in acute care, 13 in long-term care and 23 practiced in home care/community wound treatment clinics, primary

[†]Foot Care Nurses: "At this time there is no certification process for nursing foot care in Canada that is recognized by provincial regulatory bodies. The Canadian Association of Foot Care Nurses (CAFCN) is in the process of developing national competencies, educational opportunities, and a certification process for foot care nurses across Canada." Source: CAFCN, 2019, para, 1.

Table 1: Participants and Professional Role

Practical Nurse (PN)	14	With Foot Care Nurse†, Coordinator Wound Care, Winnipeg Regional Health Authority, Canada Designation	11
		Speciality not identified	3
Registered Nurse (RN)	24	With Foot Care Nurse Designation	9
		Speciality not identified	8
	Additional Education / Expertise	Foot Care Nurse & Clinical Diabetic Educator	1
		RN & Staff Education focus	2
		RN & Clinical Diabetes Educator	1
		RN & Nurse Specialized in Wound, Ostomy & Continence	1
		RN & Patient Education focus	1
		RN with Wound Care focus	1
Foot Care Nurse with no PN / RN designation	5		
Physiotherapist	2		
Podiatrist	2		
Occupational Therapist	1	Education and Research focus	
Total	48		

health-care teams and rehabilitation units. Some participants worked in two care settings.

Themes: From the data analyzed six key themes emerged. The themes are presented with barriers and solutions as described by the participants. Findings are presented in a narrative summary and pertinent quotes are included.

THEME 1: FOCUS ON PATIENT HEALTH STATUS

Barriers: Participants identified the initial triage or assessment of the patients' diabetes health status was their primary assessment foci. They were concerned about treatment and management of the patients' diabetes (glycemic control), blood pressure management, smoking status, risk of depression and nutrition choices. They shared that the assessment of a patient's foot care practice and footwear behaviours may be a lesser priority, initially. As well, factors affecting the patient's health such as poverty and homelessness, social isolation and lack of social supports were often overwhelming for the clinician. A participant

stated: "Some patients are all-consumed and focused on acquiring safe housing, accessing water, and generating an income, and that this precluded their attendance at diabetes health education sessions and caring for their feet" (Participant 7).

Solutions: Participants emphasized the role of consistent patient, family engagement and offered diabetes prevention events at the community level, including topics such as: blood pressure and blood glucose management, smoking awareness and nutrition sessions (presented by registered dietitians). Educative activities were identified as being empowering to the patient, family and community members. A participant stated: "The use of pamphlets and verbal education with patients encourages them to keep appointments – as well, ask about blood glucose results at every appointment and link to foot care, footwear" (Participant 8). Another noted that educative sessions: "engaged persons with diabetes by conducting foot care and footwear education presentations at the community level" (Participant 18).

Specifically, in the out-patient clinic setting, a participant recommended offering, “consistent and compassionate words of hope” and “encouraging words” (Participant 18), to encourage patients regarding their foot care and health related issues. Another participant stated, “Health professionals have to be aware of not labelling patients” (Participant 32), as this is identified as impeding the development of a trusting, professional relationship.

THEME 2: FOOT CARE AND FOOTWEAR EDUCATION IS A PRIORITY

Barriers: Participants described patients as having knowledge deficits related to high blood glucose and neuropathy and foot range-of-motion and mobility and the importance of, “why preventative foot care and protective footwear” is needed (Participant 18). Participants described some patients as acquiring footwear and adhering to the recommended treatment plans. Yet not all patients who acquired footwear, were able to wear, or transition fully to the new footwear. Participants described patients as returning to their previous (non-professionally fitted) footwear. As well, patients were reported to not attend follow-up footwear appointments due to work schedules, cost of travel, and lack of a driver to take them to the appointment. As a result, participants believed this interrupted the opportunity to continue relevant footwear and foot education.

Solutions: Participants described the need for diabetes education sessions with a foot care and footwear focus. They recommended engaging community members living with diabetes to encourage and coach other patients. Participants believe that sharing personal success stories would be of benefit to community members. The use of positive verbal reinforcements was identified as encouraging patients to follow-up with foot care nurses and podiatry recommendations. A podiatrist recommended: “Increase foot education through public services advertisements, television, radio, internet and educate to increase awareness...make sure is it relevant to the community” (Participant 8). A practical nurse stated, “Encourage family members to participate

in education; spousal and family members are key supports to encourage and reinforce healthy foot care behaviours and healthy nutrition choices” (Participant 36).

THEME 3: FINANCIAL DEMANDS ON PATIENT AND FAMILY

Barriers: Foot care nurses described scenarios where patients who initiated preventative foot care services were unable to sustain the cost of the service long-term due to limited personal finances. For example, a participant stated: “A patient may pay \$35.00 to \$45.00 for a foot and nail care visit once a year as that is what they can afford, though the person knows foot and nail care should be done approximately every six weeks” (Participant 11). For some patients, initiating preventative foot care or having protective footwear was prohibitive due to demands on personal and family incomes. Funding for foot and nail care and footwear were consistently identified as a significant barrier to proactively planning visits to podiatrists, and foot care nurses. In addition, patients incur costs related to fuel costs, parking fees, travel time and loss of work time, and these were identified as prohibiting patients’ attendance at follow-up appointments. Participants stated that financial issues were exacerbated when a foot ulcer developed as costs for offloading devices and footwear were not funded.

Solutions: Participants advocated for health-care systems to fund preventative foot care and footwear services. A registered nurse stated: “All patients with diabetes should have foot assessments, many need to have specialized foot care and footwear coverage; funding should accompany all new diabetes diagnoses. Expensive, yes, but probably more cost effective and financially prudent for health care in the long run, as more money is presently spent on treatment, surgery and rehabilitation” (Participant 20). The majority of participants stated that the need to immediately fund preventative foot care and footwear was crucial to prevent foot ulcers, and amputations. Participants called on all levels of government (federal, provincial, and territorial) to intervene.

THEME 4: CULTURAL COMPETENCE

Barriers: Participants identified health-care professionals' knowledge of cultural competence as wide ranging, and as a barrier to foot care in care settings. Participants identified that health professionals need to read, learn and engage in the communities and First Nation communities in which they practice. A practical nurse stated, "It takes time to understand the patient's cultural and community traditions as related to health, home and work life and I know this is hard for staff when they only visit the patient to look at their feet or shoes; but it is part of care for the patient and family" (Participant 11). A registered nurse stated, "Being culturally competent is necessary to build trust and credibility with individuals and communities, this is needed whether you live in that community or only work in that community" (Participant 18). A participant stated, "Professionals that fly in or visit communities for short work periods should be able to demonstrate cultural competence. They should be aware of the community traditions before they come to a rural or remote setting" (Participant 7).

Solutions: One participant stated that if, "health professionals demonstrated cultural competence patients might be more likely to participate in foot care and footwear recommendations" (Participant 9). For example, a registered nurse stated, "When trust and a respectful relationship is established over time, patients and families are more likely to travel to appointments and follow up with foot care and footwear recommendations as there is a trust-filled relationship in place" (Participant 32). In addition, a foot care nurse stated, "It takes time to understand the cultural context and work with patients around their cultural beliefs. Find out what the reasons(s) or phobias exist for why the patient or family do not attend education sessions, and work with the patient and family (Participant 17). Another stated, "Visit, revisit, with the patient, to find out what 'fits' with their preferences, and keep consistently educating at every visit, and promoting current education tools" (Participant 13).

THEME 5: VALUING PREVENTATIVE CARE

Barriers: Participants stated that health-care leaders do not value and prioritize foot care and footwear in the health-care system. A registered nurse with extensive wound care experience stated, "Prevention of diabetic foot complications is not a health-care system priority - our leaders do not identify this as an important issue, even when ulcers develop, they do not heed the concern" (Participant 4). In addition, a nurse stated, "We do not have support to complete diabetic foot screening and assessments, it is just not a team priority. When foot screening is not completed, the patient does not receive accompanying preventative education/support and this places the patient at increased risk for the development of foot ulcers" (Participant 14).

As well, a registered nurse in acute care stated, "Amputation prevention and limb salvage is not a priority, until the wound and limb are in a critical state and the patient is admitted to emergency and the critical care setting" (Participant 19).

Solutions: Participants identified the need for health-care leaders to prioritize preventative foot care and footwear services in all care settings. If valued through appropriate funding they identified a focus on the prevention of amputation that would lead to diabetes prevention, reduction of foot ulcers and amputation rates. They described the need for immediate funding of preventative foot care and footwear services for Canadians living with diabetes. As well, 15 (15/48) of the participants identified the urgent need for consistent and credible foot care and footwear education for health-care professionals in all care settings.

THEME 6: COMMUNICATION AND ROLES WITHIN THE INTERDISCIPLINARY TEAM

Barriers: Participants in several care settings were unclear as to who is responsible to provide basic diabetic foot care and education when no diabetes-related foot complications are evident (foot deformity, ulcers). Conflict and distrust among health-care professionals were described as interfering with building team relationships.

Participants described physicians in rural/remote Northern communities in 'fly-in' roles (short-term) as not having time to fully appreciate the patient's overall health status and plan-of-care. As well, participants stated the fly-in physician role is not structured to support long-term chronic disease management, or foot and wound assessments. Physicians were identified as lacking knowledge and assessment skills related to preventative diabetic foot care, footwear, and foot ulcer knowledge, though they are expected to conduct foot and wound assessments, make care decisions and initiate interprofessional referrals.

Access to endocrinologists and foot specialists in Northern communities is limited. Participants stated endocrinology clinic staff need to value screening and assessing patients' feet, as this demonstrates to the patient the importance of foot care and screening. Participants stated that not all staff are, "allowed to use computers as they are dedicated to physician use only"; as well, e-chart access varies, limiting the sharing of health information.

Solutions: Participants want clear policies and procedures as to when they can provide basic foot and nail care. They described tension between health-care professionals when having to decide if they could trim and file nails, versus cutting the nails of a person with diabetes. A registered nurse stated: "We could use telehealth to maximize foot and footwear screening and assessments; technology could be accessed and used by private and mainstream health-care providers to enrich patient assessments and build collaborative teams. This would help us determine the best professional to provide foot and nail care" (Participant 40).

Another recommended health-care teams: "Network with contacts in [their] area, use telehealth, develop related education and in-services for staff. Teach patients and their families and demonstrate teamwork. Develop referral forms for foot care nurses, and increase awareness for physicians, nurses, physiotherapy and occupational therapy regarding foot care and telehealth consultations" (Participant 15).

A participant identified that standardizing foot assessments for health-care providers would mitigate a lot of the stressors as to, "who is responsible to conduct the foot screening and assessment" (Participant 3). Another offered: "The responsibility for preventative foot care for persons with diabetes mellitus seems unclear, this can be improved. How can foot care nurses be expected to provide all foot care for all persons with diabetes? Nurses and personal support workers need to know if they can provide basic foot care as well" (Participant 42).

In regard to education, nurses and physicians described wanting credible, accessible diabetes foot related education (face-to-face, conferences, or online). They indicated that internal team conflicts were a challenge and that roles and responsibilities for the provision of preventative foot care could be clearer. Physicians were identified as needing diabetes education regarding the appropriate time to make foot care and footwear referrals. They indicated that foot care and footwear should be emphasized at all appointments conducted by physicians, endocrinologists, nurse practitioners, renal and ophthalmology clinics. For example, a nurse stated: "A client and family travelled overnight to see the speciality team and endocrinologist. The nurse had written a note and sent it with the patient and family to ask for a foot assessment and foot care and footwear referral. The patient was told this was not the job of this team. This response added to my distrust and disinterest of preventative foot care among us as team members" (Participant 9).

Finally, trust and respect between team members were identified as creating tension. Participants recommend physicians, especially in Northern communities, have basic foot care knowledge as well as online and telephone support for complex wounds/ulcers, foot care and footwear. Sharing of clinical data on patient charts was at time limited by computer access only designated for certain professionals. Participants indicated this contributed to lack of trust, respect and limited teamwork within the professional teams. Having equal access to patient e-charts would build trust and knowledge sharing. With the constant

rotation of physicians in and out of communities, shared technology access would mean patients do not have to, “tell their stories and medical history – over-and-over, as this is burdensome for the patient and their family” (Participant 14). Lastly: “Physicians need foot education and need to have the authority to write a physician’s order for foot care and footwear services to be covered – by completing a prescription” (Participant 42).

Discussion

1) Patient health status: Diabetes affects people in almost all countries at all stages of economic and social development.²² Of concern in Canada are the higher prevalence rates of diabetes in First Nations, Aboriginal, Métis and minority ethnic groups.^{2,10,23} The chronic care model emphasizes the value of patient self-care behaviours; in turn, patient behaviour is affected by what the patient believes and how they view themselves. To support patients, health education and interventions must be culturally appropriate, individualized and should target self-care skills and include emotional support. Developing a partnership with the patient and provider supports discussion about the health issue, aids in defining clear and reasonable goals, setting priorities, and developing and monitoring patient progress.²²

In this study, participants clearly identified that upon completion of a patient assessment, the patient’s health status remained their primary concern (i.e., diabetes status, glycemic control, depressive symptoms, blood pressure, nutrition, foot care and smoking status). Patients living with diabetes have a complex range of responsibilities. Patients’ health statuses may be complicated when unrecognized depression affects their ability to perform self-care foot care activities. As well, a patient’s self-efficacy, or belief that they can perform self-care activities, may be lowered.^{23,24} Yet, when culturally-appropriate health education is offered, patients’ glycemic control, knowledge of diabetes and healthy lifestyle choices were shown to have short to medium improvements.²⁵

Patients with a foot complication or ulcer do not necessarily seek foot care services, or access such

care in a timely manner.²⁶ Patients describe having limited foot education, competing priorities in life, being unable to perform self-care foot behaviours (daily foot exam) and varied awareness levels of diabetic foot complications.²⁶ Participants in this study did not comment on vision or inability to view the foot.² Overall, physical, social and mental health-related quality of life is affected when living with a foot ulcer.²⁷⁻³¹ Yekta and colleagues (2011), reported that patients who go on to develop a foot ulcer have lower health-related quality of life (physical and mental scores) than patients without a foot ulcer. For those with foot ulcers, low education levels, living alone and having at least one diabetes-related complication contributed to lower health-related quality of life.³²

2) Foot care and footwear education is a priority: Closely linked to effective patient self-care is supportive foot care and footwear education. In the chronic care model, foot care and footwear education need to be embraced by professionals throughout the health-care system (leaders to frontline staff). Delivery of safe, high-quality care includes consistent communication through education programs for patients and families.²² Education for persons with diabetes starts with prevention and includes strategies to mitigate risk and then manage foot and ulcer complications, as necessary.⁴

The cornerstone for the prevention of foot ulcers is daily foot examinations.⁴ However, it is challenging to engage individuals in foot education if they have emotional or mental health issues such as diabetes distress, depressive symptoms, or depression; this is further challenged if patients have developed a foot ulcer and have wound treatments and infection management. Participants in this study described patients and families as having knowledge deficits regarding foot care practices and footwear. For some patients, who initiate foot care, they do continue to seek preventative foot care and footwear long-term. Participants recommended community-based education by credible educators. Dorresteijn and colleagues (2014) reviewed 12 studies related to patient education and the prevention of diabetic

foot ulcers. Patients' foot care knowledge improved in the short term with some changes to self-reported, self-care behaviours. More research is needed in this important area of clinical practice.³³

3) Financial demands on patient and family:

Participants in this study were deeply aware of the patients' financial burden of paying for foot care and footwear services. If diabetes-related foot complications resulted in a foot ulcer, this may interfere with a patient's ability to work and may impede their ability to pay for foot care and footwear services. Foot complications may impede patients' ability to obtain and maintain employment, especially if the patient needs to stand and complete a work day or specific task when wearing an offloading device.³⁴ Females with type 2 diabetes experience wage differences of almost 50% when compared to those without diabetes.³⁴ As well, patients with diabetes and foot neuropathy were reported to have increased use of sick time, and may prematurely retire. Family and caregivers may lose paid employment, and reduce volunteer activities, to take time out of their day to support the individuals with diabetes-complications.³⁷ Breton and colleagues (2013) (n=23 studies) studied increased absenteeism, reduced work productivity, and early retirement trends in persons with diabetes. Persons with diabetes had fatigue and higher than average absenteeism from work (0.9 to 5.7 days). When peripheral neuropathy was evident, persons were reported to be 52% more likely to lose \geq two hours of work time per week.³⁷ Similarly, Sylvia and colleagues (2012) explored the work limitations of employees with diabetes (n=385). Of the employees, 72% reported work limitations, changes to work hours, issues with mental/interpersonal health and reduced output. When the study data was corrected for gender, employment settings, response type and years in the program, those with high risk factors for diabetes were more likely to report overall work limitations.³⁸

4) Cultural competence: Closely linked to patient health status and education was the theme of culture and traditions. Participants identified the

need for foot care and footwear professionals to study and demonstrate cultural competence. As part of competence, clinicians need to take time to understand the complexities of the culture and environment in which one practices. This takes time and building of trust. Therefore, this can be challenging when practitioners fly in and out, and do not know the community or do not develop relationships with individual patients and their families.

There is limited research regarding the experiences of First Nations (Indigenous) peoples affected by diabetes-related foot complications.⁴⁰ For Canadian First Nations, Aboriginal and Métis members, emotional health and illness are attributed to complex issues related to residential schools, socioeconomic issues, poverty, and loss of language and culture. Over time, this has contributed to emotional ill-health, including loss of identity, stress, anxiety, depression and post-traumatic stress disorders which in turn may interfere with one's ability to participate in preventive foot care behaviours and footwear.⁴⁰

Some participants described completing health organization/agency e-modules or workshops about cultural competence.

5) Valuing preventative care: Participants described the need for more foot care and footwear education, as diabetic foot screening/assessments are not identified as a priority by some health teams and care providers. When foot assessments are not completed, the patient does not receive accompanying education, and may be placed at additional risk. In a recent quality improvement study, provision of staff education on diabetic foot screening improved clinician screening practices from 9% to 69%.⁴¹

6) Interdisciplinary team roles and communication:

Within teams, participants described a lack of trust and respect between professionals. Within the health-care systems they describe a lack of commitment to focus on diabetes foot care and footwear prevention and education. The chronic care model emphasizes a health-care system that is proactive, integrative, continuous and focused on the family and individuals living with the chronic disease.²² In

a review of 12 studies, Baptista and colleagues (2016) recommend maximizing communication systems, technologies and communication between manager and service providers. When teams were involved in clinical-decision-support changes, health professionals were observed to change their behaviours. When making changes, clinical decisions should be made collaboratively.²²

To effectively maximize the role of the chronic care model, multidimensional efforts must be designed, implemented and measured.¹⁷ Prevention of complex foot ulcers requires that the health-care system acknowledge all elements of the chronic care model. Integrated teamwork is needed, and issues of power and communication must be addressed throughout the health-care system. More research is needed in this important area of health care.

Summary

In this small study, participants shared the challenges of providing foot care and footwear services to patients in rural and small communities in Northern Manitoba and Ontario, Canada. Six key themes emerged from the rich data. Patient and family education that is based in the community, built on trust and mutual respect is recommended. To build this trust, health-care professionals must demonstrate cultural competence. The challenge of providers coming in and out of small remote communities added to the stress of reduced communication between the patient and provider, and within health-care teams. The financial burden incurred by patients who need preventative foot care and footwear services, may preclude patients from accessing short and long-term services. The study participants recommend that organizations and leaders embrace a preventative approach in which all health-care providers are responsible for discussing and supporting patients' efforts to prevent diabetes-related foot complications. The participants in this study provided rich data related to solutions to foot care and footwear issues. ■

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