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Perspectives of Canadian Healthcare Professionals on Diabetes Self-Management and Care: Diabetes Attitudes, Wishes and Needs 2 (DAWN2™)

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Abstract

Aim: The second Diabetes Attitudes, Wishes and Needs (DAWN2) study aimed to describe the psychosocial challenges faced by People With Diabetes (PWD), their families, and the Healthcare Professionals (HCPs); and to explore new avenues for improving care, support and self-management. This paper presents results from Canadian HCPs (family practice/general practice physicians), specialists – endocrinologist/diabetologists, nurses and dietitians) —their attitudes and beliefs about diabetes care, and perceptions of: skills in supporting self-management; PWD' access to services; and needs and areas for improvement in diabetes self-management.

Methods: HCPs working in diabetes were recruited from across Canada to complete online surveys that included validated/adapted questionnaires assessing health-related Quality of Life (QoL), self-management, attitudes and beliefs, social support, and priorities for improving diabetes care.

Results: Two hundred and eighty-one Canadian HCPs participated in the study – 120 Primary Care Physicians (PCPs) and General Practitioners (GPs), 80 specialists, 41 nurses and 40 dietitians. A majority of HCPs (65%) saw a need for PWD to take a more active role in their own care. Approximately one-half of HCPs said they discussed emotional issues and assessed the PWD for depression. Most HCPs but particularly nurses and dietitians (76% PCPs/GPs, 77% specialists, and 98% nurses/dietitians) reported that they encouraged the PWD to ask questions "most of the time or always". Regarding self-management, approximately half (44-52%) of HCPs indicated that the PWD they treated needed to improve "taking their diabetes medications as recommended" and "testing their blood sugars." HCPs also indicated they wanted further training on providing self-management support and psychological resources.

Conclusions: The findings from this study indicate that there is a continued need for self-management education in Canada. HCPs want additional training and resources for supporting their PWD in acquiring improved self-management skills and for recognizing and managing emotional issues associated with diabetes.

Keywords: DAWN2 study; Diabetes; Self-management; Patient Education; Empowerment; Patient-centered care; Behavioral Change; Healthcare Professional

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Introduction

Self-management is becoming increasingly recognized by Healthcare Professionals (HCPs) as the most effective approach for managing diabetes and other chronic diseases [1, 2]. Yet many HCPs continue to struggle with moving from the traditional approach of making recommendations, educating, and offering treatment to People With Diabetes (PWD), to that of a supportive, collaborative coaching role [2–4]. Active listening skills, motivational communication, enhancing confidence, and collaborative goal-setting are all essential tools to empower individuals to make health-behavior changes thereby taking control of their diabetes [5–8]. As clinicians are trying to implement this new approach into their diabetes management, the prevalence of diabetes continues to rise at dramatic rates. According to a 2010 report from the Canadian Diabetes Association, the prevalence rate nationwide has almost doubled over the past decade [9] and prevalence data from the International Diabetes Federation Diabetes Atlas Report 2013 place Canada at a prevalence rate of 10.2% [10]. Of further concern, most Canadians are not at target for optimal blood glucose control [9].

To better understand the concerns of individuals with diabetes, the Diabetes Attitudes, Wishes and Needs (DAWN) study, a multinational survey (excluding Canada) was conducted in 2001 [11]. Findings from the original DAWN survey indicated that PWD were seeking organized interdisciplinary care teams that were skilled at managing chronic diseases, both medically and psychologically, to support them in self-managing their diabetes [11]. The results of the DAWN survey led to a "Call to Action" encouraging HCPs, stakeholders, and government agencies to implement patient-centered strategies for facilitating active self-management and appropriate support systems. Since the release of the DAWN study data, four stakeholder summits have taken place, with a focus on facilitating the self-management of chronic diseases. Some parts of Canada have responded with increased government funding dedicated to supporting self-management and educational events to enhance HCP knowledge on self-management approaches [12]. In addition, the Canadian Diabetes Educator Certification Board (CDECB) gives the status of Certified Diabetes Educator to eligible HCPs who pass an examination. Online training is also emerging for HCPs across the country [12]. The most recent Canadian Clinical Practice Guidelines have included two chapters focusing on self-management and incorporating it into the organization of diabetes care [13, 14]. These efforts notwithstanding, specific data on HCP attitudes and behaviors regarding self-management are essential and lacking.

To further identify areas of diabetes self-management that may require improvement, DAWN2 was recently conducted in 17 countries, this time including Canada. This study built on the original DAWN findings but included not only the perspectives of people living with diabetes, but also of Family Members (FMs) and HCPs caring for PWD. The DAWN2 survey was designed to assess similar domains for HCPs, PWD, and FMs, providing an all-round perspective on diabetes self-management and self-management support, including psychosocial dimensions [15–17]. The results and perspectives of Canadian HCPs involved in diabetes care are presented in this paper. Specifically, the focus of this paper is on HCP attitudes and beliefs about diabetes care, perceived skill in self-management support, access to services, and perceived needs for improvement. With regard to self-management support, we present the results for both HCPs and PWD who rated the same items of the survey. This allows for identification of communication gaps or synchrony between these two groups.

Methods

Detailed methods for the DAWN2 study have been published previously [18]. Key aspects of the study methodology pertaining to HCP participants, including the

DAWN2 global and Canadian component, are summarized in this paper.

Design and Study Participants

Briefly, DAWN2 was an interdisciplinary and multi-stakeholder study conducted across four continents in 17 countries, including Canada. In Canada, potential participants were recruited online from diabetes panels and databases. The recruitment quota for each of the 17 countries, including Canada, was a minimum of 280 HCPs; enrollment stopped when the planned number of participants was reached. Inclusion criteria included seeing at least five adults with diabetes (aged 18 years or older) per month having practiced clinical medicine for at least 1 year for family practice/general practice physicians (GPs), dietitians, and nurses. Diabetes specialists were included if they saw at least 50 adults with diabetes per month and had been in practice for more than 1 year. All physicians were required to have prescribed diabetes medications (oral antihyperglycemics for non-specializing GPs; insulin for specializing GPs or diabetes specialists).

Survey

The survey comprised 55 questions, some from the original DAWN study, others from modified versions of validated measures previously published as part of DAWN2 [15–18], including:

- The Healthcare Professional Patient Assessment of Chronic Illness Care DAWN Short Form (HCP-PACIC-DSF)
- The HCP Health Care Climate DAWN Short Form (HCP-HCC-DSF) questionnaire
- Helpfulness of Active Patient Involvement–DAWN Short Form (HAPI-DSF)

Additional questions were developed specifically for HCPs, including open-ended questions to allow specific experiences to be shared. Table 1 presents the various questions and measures for the HCPs to complete. The survey was presented online for easy access and completion by HCPs.

The study was approved by the Research Ethics Board of Capital Health in Halifax, Canada.

Table 1: DAWN 2 Survey Question and Measures* for Health Care Professionals

Categories **Indicators**	Survey question and indicator	Response options
QoL/treatment burden		
Support in providing psychological care for emotionally distressed patients:		
	Which of the following are available as support for you in providing adequate psychological care for your patients with diabetes who are emotionally distressed? Please select all that apply. Excerpt from full questionnaire (reported) • I have no resources to offer patients who are emotionally distressed or at risk of depression Other statements from questionnaire (not reported) • Practical clinical guidelines for management of psychological issues related to diabetes • Opportunities for skills training in dealing with psychological and emotional aspects of diabetes • Reimbursement for the time I spend to evaluate and counsel regarding psychological issues • Self-help patient materials for coping with emotional issues which I can give to patients	Multiple response

	• Psychological support programmes or groups specifically addressing emotional aspects of diabetes • Community-based diabetes counselling or peer support programmes that I can refer patients to • Mental health professionals with experience in diabetes that I can refer patients to • Mental health professionals that I get regular supervision from in my care for patients with diabetes • Clinical guidelines and medications for the pharmacological treatment of depression or anxiety • Other	
Attitudes to discussing emotional issues:		
	Which statement below best describes your routine practice when you see patients with diabetes who are emotionally distressed? Excerpt from full questionnaire (reported) • I discuss emotional/psychological issues with most or all patients who have emotional distress or are at risk of depression Other statements from questionnaire (not reported) • I generally do not discuss emotional/psychological issues with my patients • I discuss emotional/psychological issues only if the patient brings them up • Other	Multiple response
Involvement/empowerment		
HAPI-DSF: Helpfulness of Active Patient Involvement **People with diabetes engaged in different behaviours indicative of patient empowerment†**		
	How helpful is it or would it be for you as a healthcare professional when your patients with diabetes do each of the following? • Prepare questions about their diabetes in advance of the consultation • Tell you how you can best support them in managing their diabetes • Seek out the information they need to manage their diabetes on their own • Take part in activities in the community to improve their diabetes self-care	• Very unhelpful • Somewhat unhelpful • Neither helpful or unhelpful • Somewhat unhelpful • Very helpful
Self-management		
Based on what your own patients are currently doing to manage their diabetes, how many do you think need significant improvement in the following areas right now? • Eating healthy • Being physically active • Taking medications as recommended • Testing blood sugar		• None/a few • About one quarter • About half • About three quarters

• Dealing with their emotions associated with having diabetes • Maintaining healthy weight Taking responsibility for managing their own condition		Most/all
Healthcare provision		
Areas needing major improvement		
	Please indicate in which of the following areas you feel a major improvement is needed for your patients with diabetes. Please select all that apply. Excerpt from full questionnaire (reported) • Availability of diabetes self-management education • Availability of resources for the provision of psychological support and care for diabetes Other statements from questionnaire (not reported) • Access to the newest diabetes treatments • Access to basic diabetes medications • Availability of testing devices/medical equipment for diabetes • Planning and coordination of care for patients with multiple diseases • Affordability of medications for diabetes • None of these	Multiple response
	Overall, which of the following areas do you feel require major improvements in order to help people with diabetes and their families in your community or society? Please select all that apply. Excerpt from full questionnaire (reported) • Earlier diagnosis and treatment of diabetes • Prevention of Type 2 diabetes Other statements from questionnaire (not reported) • Acceptance of people with diabetes as equal members of society • Convenient and safe places to participate in physical activity • Places to buy healthy and affordable food • Workplaces which make it easy for people to manage their diabetes • Public awareness of diabetes • None of these	Multiple response
Self-reported provision of person-centred chronic illness care		
HCP-	Now we would like to understand the way you are able to provide care for people with diabetes given the resources and time you have available in your daily practice. During the past 12 months, when you saw patients with diabetes for their regular visits, how often did you: • Ask your patients how their diabetes affects their life§	• None of the time • A little of the time • Some of the time • Most of the time • Always

PACIC-DSF	• Ask your patients to talk about any problems they might have with their medicines or their effects • Ask your patients for their ideas when making a plan for their diabetes care • Help your patients to set specific goals to improve the management of their diabetes • Help your patients to make plans to achieve their diabetes care goals • Help your patients make plans for how to get support from their friends, family or community • Encourage your patients to go to a specific group or class to help them cope with their diabetes • Contact your patients after their visit to see how things were going • Coordinate your care with the other healthcare professionals that your patient sees for their diabetes	
HCP-HCC-DSF	• Encourage your patients to ask questions • Listen carefully to how your patients would like to do things • Convey confidence in your patients' ability to make changes	• None of the time • A little of the time • Some of the time • Most of the time • Always
Healthcare organization		
	Thinking generally about diabetes care in your country, please indicate the extent to which you agree or disagree with each of the following statements. • Healthcare in this country is well organized for the management of chronic conditions including diabetes • Diabetes should be given higher priority than it currently receives, compared with other conditions • More qualified nurse-educators or specialist diabetes nurses should be available • There should be better communication within the diabetes management team • There should be better access to psychologists or psychiatrists for referral • The healthcare remuneration system is a barrier to effective diabetes management (physicians only) • People with diabetes are sufficiently involved in influencing diabetes care policies and healthcare decisions in my country • Improving the availability of diabetes self-management education will help reduce the burden of diabetes in my country • Healthcare professionals must collaborate more with patient and volunteer organizations in the community to improve long-term outcomes for patients with chronic conditions • All diabetes care professionals should have formal training in effective communications and how to support behaviour change	Range • Fully disagree • 1 • 2 • 3 • 4 • 5 • 6 • Fully agree

	• Involvement of family members of people with diabetes is a vital part of good diabetes care • Health professionals need more tools to help people at risk of diabetes lose weight to prevent or delay the development of diabetes	
Availability of prevention resources		
	Which of the following are available to you for providing preventative care for people at risk of diabetes? Please select all that apply. Excerpt from full questionnaire (reported) • Reimbursement for the time I spend to discuss and plan prevention of diabetes with people at risk • Interventions for weight loss or physical exercise that I can refer people at risk to Other statements from questionnaire (not reported) • Practical guidelines regarding screening and prevention of diabetes • Medical treatments that can effectively reduce the risk of diabetes in high-risk populations • Community-based prevention and lifestyle change programmes that I can refer people at risk to • Qualified professionals skilled in behaviour change and lifestyle change support that I can refer people at risk to • Other • I have no resources to offer for people who are at high risk of diabetes	Multi select
Education		
Completed/attending postgraduate diabetes education/training		
	Have you ever attended postgraduate training in any of the following areas? Please select all that apply. • Medical management of diabetes • Dietary/nutritional management of diabetes • Effective communication and motivation strategies to support long-term behaviour change • Provision of diabetes self-management education and support to patients with diabetes • Management of psychological aspects of diabetes • None of these	Multi select
Would like to receive more training		
	In which of the following areas would you like to receive more training or support on an ongoing basis in order to provide better care for your patients with diabetes? Please select all that apply. Excerpt from full questionnaire (reported) • Medical management of diabetes • Dietary/nutritional management of diabetes	Multi select

	• Effective communication and motivation strategies to support long-term behaviour change • Provision of effective self-management education and support to patients with diabetes • Management of psychological aspects of diabetes	
Society		
Discrimination against people with diabetes because of diabetes		
	Overall, which of the following areas do you feel require **major** improvement in order to help people with diabetes and their families in your community or society? Please select <u>all</u> that apply. Excerpt from full questionnaire (reported) • Acceptance of people with diabetes as equal members of society Other statements from questionnaire (not reported) • Convenient and safe places to participate in physical activity • Places to buy healthy and affordable food • Workplaces which make it easy for people to manage their diabetes • Earlier diagnosis and treatment of diabetes • Public awareness of diabetes • Prevention of Type 2 diabetes • None of these	Multi select

*Only relevant questions reflecting the data presented in Table 1 (Results), and not the full questionnaire, are provided here. Where relevant, a list of items providing context of reported item is provided.

†Reported as % healthcare professionals indicating ‘somewhat' or 'very' helpful

‡Reported as % healthcare professionals indicating ‘about half' to 'most/all’

§Reported individually also as % healthcare professionals indicating ‘most of the time' or 'always’

HAPI-DSF, Helpfulness of Active Patient Involvement–DAWN Short Form; HCP-HCC-DSF, healthcare professional–Health Care Climate–DAWN Short Form; HCP-PACIC-DSF, healthcare professional–Patient Assessment of Chronic Illness Care–DAWN Short Form; QoL, quality of life.

Statistical Analyses

Data were analyzed and presented as descriptive statistics or as percentages of responses. Where substantial differences in percentages between the different groups of HCPs (i.e. General Practitioners, Specialists, nurses and dietitians) were observed, these differences in percentages were tested using the chi-square statistic. Because the total Canadian sample size for HCPs was small, and would be even more so for each group of HCPs, the data were unweighted and unadjusted. This allowed for the entire sample to be analyzed descriptively, with the limitation that the findings are not generalizable across the entire population of HCPs who care for people with diabetes in Canada.

Results

Two hundred and eighty-one Canadian HCPs (120 GPs, 80 specialists (endocrinologists/diabetologists), 41 nurses, and 40 dietitians) participated in the DAWN2 online survey between March and May 2012 with representation across the country (Table 2). The comparative analyses among HCPs for various areas explored in the survey were found to be statistically significant ($p<0.001$).

Table 2: Canadian Healthcare professionals participating in the DAWN2 study. (n=281)

Healthcare professionals	General practitioners (A)	Specialists (B)	Nurses/dietitians (C)
Gender			
Male	72%	73%	4%
Female	28%	28%	96%
Specialty			
Primary care professional/general practitioner	93%	29%	
Internal medicine	7%	20%	
Diabetologist		14%	
Endocrinologist		38%	
Diabetes nurse specialist			15%
General/practice nurse			14%
Nurse practitioner			2%
Diabetes educator			20%
Dietitian/nutritionist			49%
Certified diabetes educator	NA	NA	41%

Attitudes and Beliefs about Diabetes Care

The majority (68% of GPs, 64% of specialists, and 64% of nurses/dietitians) believed that PWD needed to take responsibility for managing their own condition. Regarding management, HCPs reported that a high percentage (85–98%) of PWD in their practice had their Blood Pressure (BP), cholesterol, and A1C assessed in the past 12 months; and that the majority of PWD (77–82%) had their weight and feet checked. Just over half (52.9%) of HCPs indicated that they discussed emotional issues with the PWD and approximately 49% of PWD had been assessed for depression. This concurs with the PWD survey showing that less than half (35% of people with type 2 and 44% of those with type 1 diabetes) indicated they were asked by their HCP if they have been anxious or depressed. Approximately half of nurses/dietitians (47%) and one-third of GPs (33%) and specialists (38%) agreed that it was important to understand the emotional issues faced by their PWD to provide effective diabetes care. However, only a small percentage of HCPs (18–22%) indicated they had available resources for PWD who were emotionally distressed or at risk of depression. Approximately half of all HCPs (44–55%) thought that it was important to advocate on behalf of PWD.

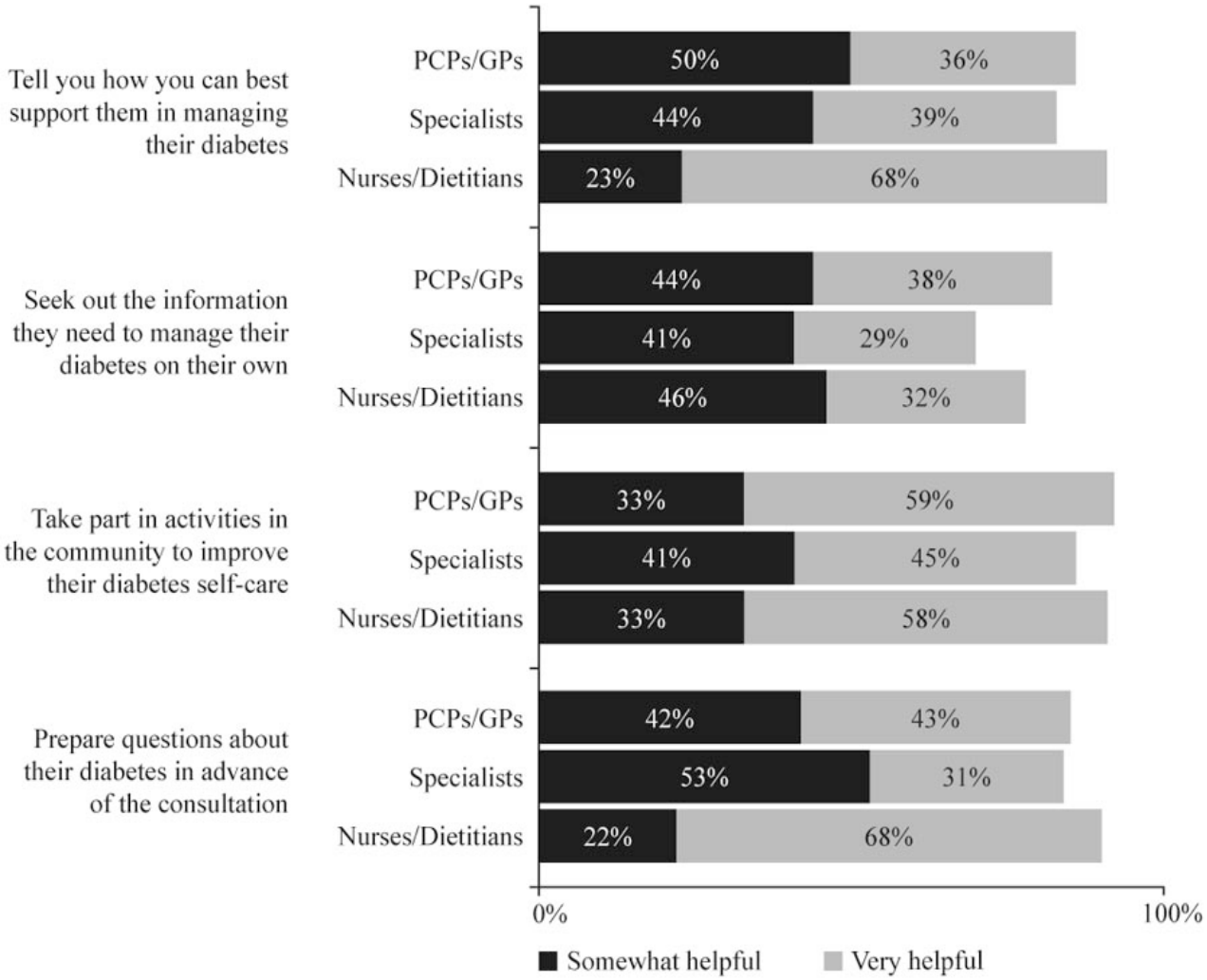
Skills in Supporting Patient Self-management

A small percentage of HCPs (8% of GPs, 13% of specialists, and 15% of nurses/dietitians) reported having had opportunities for skills training that focused on the psychological and emotional aspects of diabetes management.

When supporting diabetes self-management, HCPs tended to consider it “very helpful” when PWD communicated how they could best support them in managing their diabetes and when PWD prepared questions in advance of a consultation; however, more nurses and dietitians (68%/68%) considered these patient behaviors “very helpful” than did PCPs/GPs (36%/43%) or diabetes specialists. This can be seen in Figure 1

where group differences exist for both PWD communicating support needs ($X^2 = 22.33$, $P < 0.001$) as well as PWD preparing questions ($X^2 = 23.15$, $P < 0.001$).

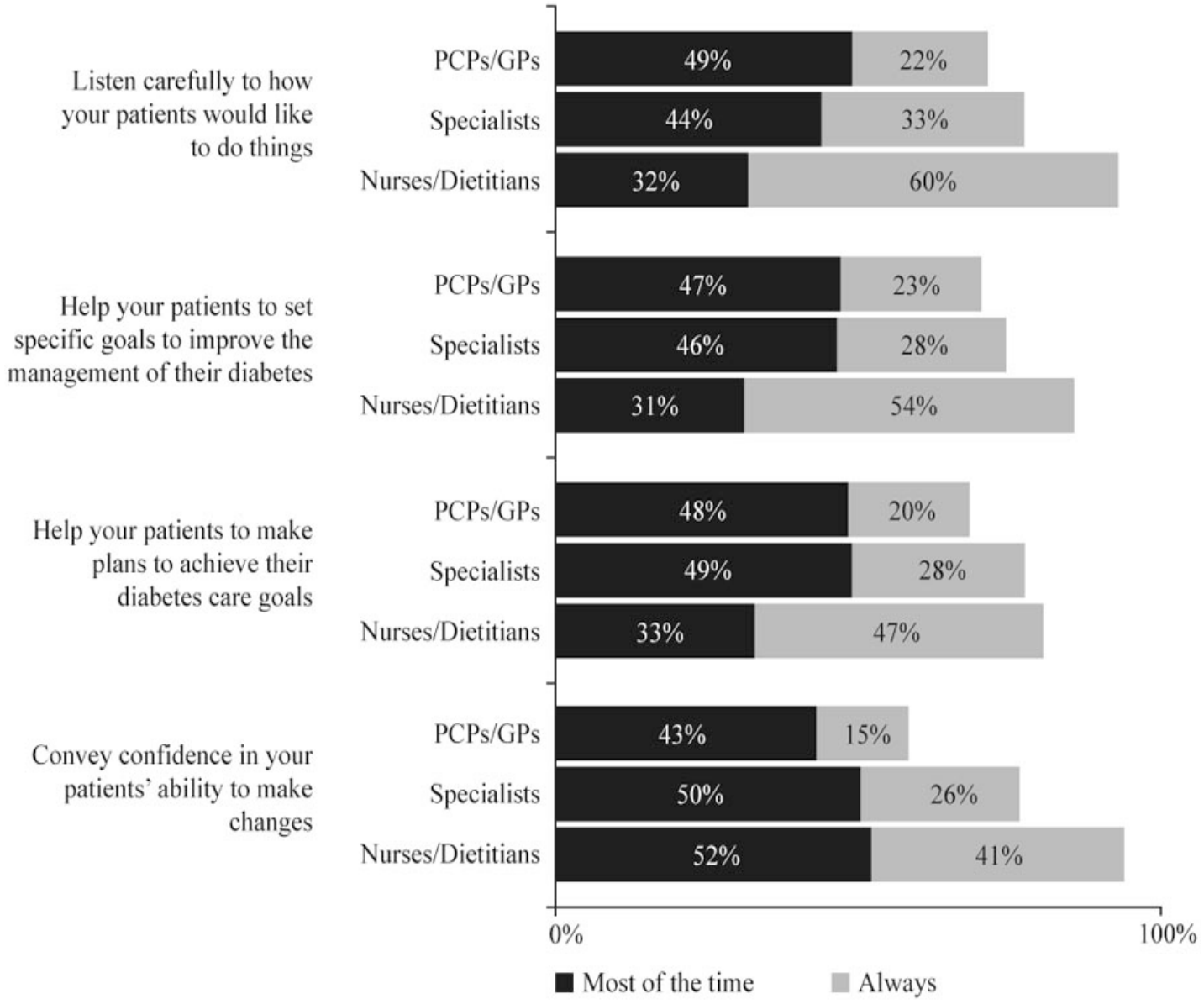
Figure 1: Patient behaviors that healthcare professionals (HCPs) found most helpful when supporting diabetes self-management. These are responses of HCPs to the question: How helpful is it or would it be for you as a healthcare professional when the patients with diabetes that you care for, do each of the following?



Base: All qualified HCPs (PCPs/GPs: n = 120; Specialists: n = 80; Nurses/dietitians: n = 81) Q900 GPs: general practitioners; PCPs: primary care professionals.

Less than half of HCPs (27–49%) reported asking PWD "most of the time or always" about the effects of diabetes on their lives. GPs were less likely to ask this than endocrinologists and nurses/dietitians ($X^2 = 11.43$, $P < 0.004$). However, the majority of HCPs (71–92%), with the highest percentage being nurses and dietitians (92%; $X^2 = 14.02$. $P < 0.001$), stated that they listened carefully "most of the time or always" when PWD described their self-management preferences. Most HCPs also tended to perceive that they conveyed confidence in the ability of PWD who they treat to make behavioral changes, "most of the time or always." Significantly more nurses and dietitians (93%) reported they achieved this aspect of diabetes care "most of the time or always" ($X^2 = 30.80$, $P < 0.001$). These results are shown in Figure 2.

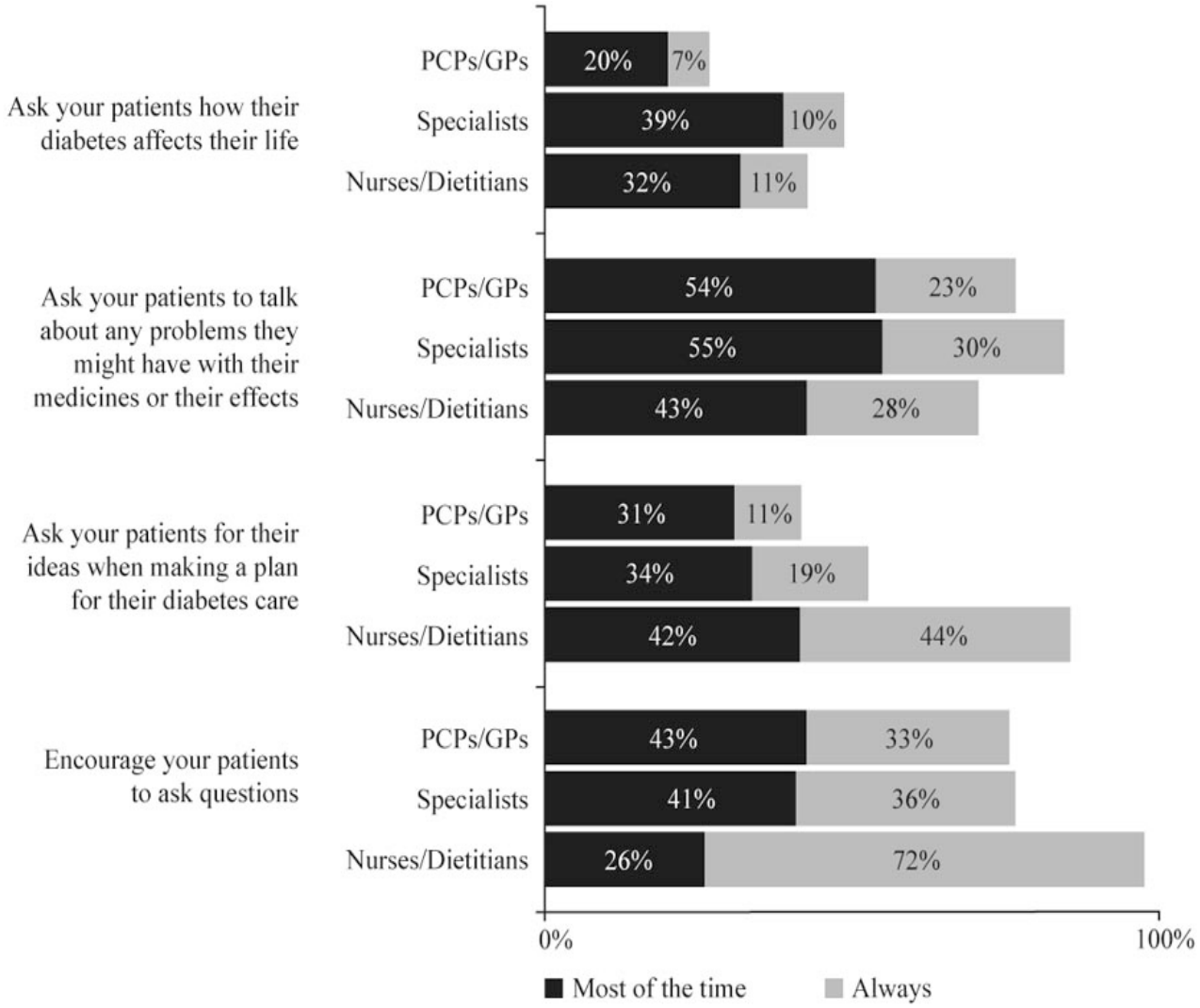
Figure 2: Healthcare professionals' responses concerning their support for people with diabetes. The question they responded to was: During the past 12 months, when you saw patients with diabetes for their regular visits, how often did you [Listen carefully to how your patients would like to do things]; [Help your patients to set specific goals to improve the management of their diabetes]; [Help your patients to make plans to achieve their diabetes care goals]; and [Convey confidence in your patients' ability to make changes]?



GPs: general practitioners; PCPs: primary care professionals.

Most HCPs (76% of GPs, 77% of specialists, and 98% of nurses/dietitians), but significantly more nurses/dietitians (X^2 18.48, $P < 0.001$) reported that they encouraged PWD to ask questions during the clinical consultation "most of the time or always" (Figure 3).

Figure 3: Frequency of questions asked by healthcare professionals. The question they responded to was: During the past 12 months, when you saw patients with diabetes for their regular visits, how often did you: [Ask your patients how their diabetes affects their life]; [Ask your patients to talk about any problems they might have with their medicines or their effects]; [Ask your patients for their ideas when making a plan for their diabetes care] and [Encourage your patients to ask questions].



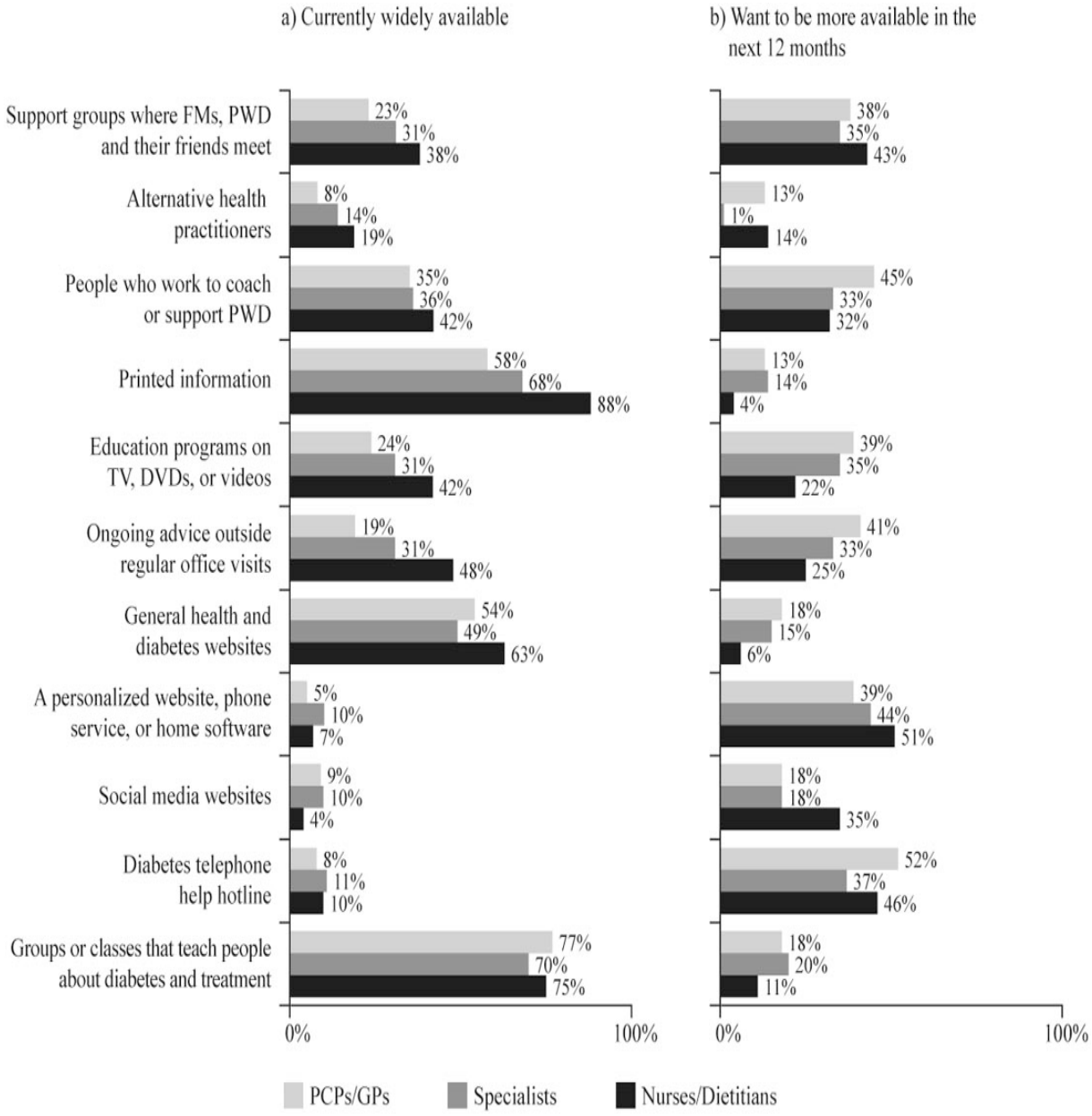
GPs: general practitioners; PCPs: primary care professionals.

Regarding the self-management of medications, 71% to 85% of HCPs stated that they inquired "most of the time or always" whether the PWD who they treated had problems with their medications or the effects of their medications. Approximately half of HCPs (44–52%) indicated that the PWD who they treated needed to improve "taking their diabetes medications as recommended" and "testing their blood sugar."

Access to Services

The majority (70–77%) of HCPs indicated that groups or classes were available to support their PWD; yet approximately 60% of HCPs (56–59%) felt that improving availability of self-management diabetes education could help reduce the burden of diabetes. Between 37% and 52% of Canadian HCPs wanted to offer a telephone hotline or personalized website to the PWD who they would treat in the next 12 months. Between 32% and 45% of HCPs also identified those who coach or support PWD as important resources (Figure 4).

Figure 4: Resources that healthcare professionals (a) indicated were widely available or (b) want to be more available in next 12 months.



FMs, family members; GPs: general practitioners; PCPs: primary care professionals.

Needs and Identified Areas for Improvement

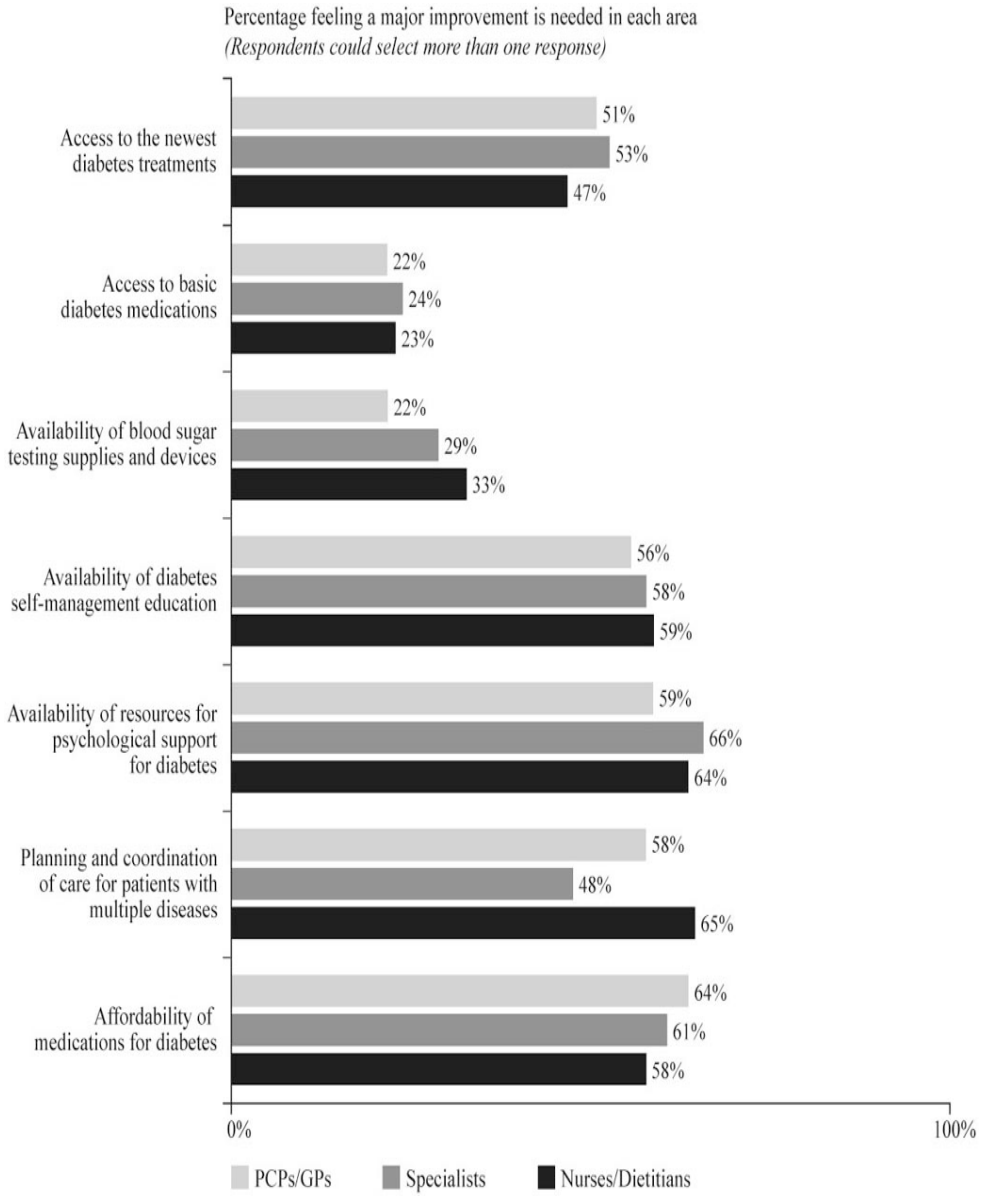
As mentioned previously, the majority of HCPs wanted the PWD who they treat to take a more active role in their own diabetes care. According to 70–80% of HCPs, the top three areas in self-management care that PWD needed to improve were eating healthier, being more physically active, and maintaining a healthy body weight.

However, HCPs also wanted more external support for PWD; the most important required improvements recognized in this context were self-management education and psychological support resources. A high percentage of HCPs (59% of GPs, 64% of nurses/dietitians, and 66% of specialists) indicated a need for better resources for psychological support of the PWD who they treat. A small percentage of HCPs, but more nurses and dietitians (8% of GPs, 13% of specialists, and 32% of

nurses/dietitians; **(**X^2 = 13.14, P < 0.001) had had opportunities for skills training in dealing with the psychological and emotional aspects of diabetes. A higher percentage of nurses and dietitians (78%) than GPs (50%) and specialists (48%) felt that all diabetes care professionals should have formal training in effective communication and other skills necessary to support behavioral change in PWD (X^2 = 14.40 P < 0.001).

In addition to psychological and self-management support, more affordable diabetes medications were identified by HCPs as a top healthcare improvement needed. Sixty-four percent of GPs were concerned about the affordability of medications and 53% of the specialists saw access to the newest medications as a problem requiring improvement. The majority of GPs and nurses/dietitians identified the need for better planning and coordination of care for patients with multiple diseases, including secondary complications from diabetes (Figure 5).

Figure 5: Percentage of healthcare professionals feeling a major improvement is needed in each area.



GPs: general practitioners; PCPs: primary care professionals.

Diabetes prevention was identified as a top priority; more than three-quarters of GPs, specialists, and nurses/dietitians agreed that this was an area requiring major improvement, suggesting the need for increased public awareness and earlier diagnosis and treatment of diabetes.

Discussion

The DAWN2 study was conducted across Canada, capturing the opinions of HCPs experienced in the treatment of PWD (including PCPs, specialists such as endocrinologists/diabetologists, nurses and dietitians) about diabetes self-management. Using standardized and validated instruments where possible, HCPs shared their attitudes and beliefs about diabetes care, skills relating to self-management education, access to services, and their needs and wishes for areas for improvement. The respondents represent a cross-section of Canadian providers. In Canada, the majority of PWD receive care from their family practice/general practice physician and this was the largest group in the sample. In addition, the opinions of medical specialists and nurses/dietitians who provide diabetes care were included. Finally, 41% of nurses/dietitians were CDE qualified, indicating a breadth of input from diabetes specialists and nonspecialists nurses/dietitians.

The survey results provide not only diabetes educators with valuable feedback to incorporate into diabetes education programs, but also remind us that self-management principles need to be incorporated into every healthcare interaction, including each visit with general practice or specialist physicians. Attention should be paid to the disparity between HCPs and PWD beliefs with respect to supportive behaviors such as listening, setting goals, and conveying confidence. Less than half of the PWD (48% with type 1 and 36% with type 2 diabetes) perceived that their HCPs listened carefully to "how I would like to do things", yet a much higher percentage of HCPs (71% GPs; 77% specialists; 92% nurses/dietitians) answered this similar question, "How frequently do you listen carefully to how your PWD would like to do things?", as "Most of the time or always". Consistent approaches with motivational interviewing, active listening, and conveying confidence in the PWD' ability, all support PWD self-efficacy to more effectively self-manage their diabetes or other chronic disease. These skills may address some of the inconsistencies identified between HCPs and PWDs.

There were also a number of disconnects between HCPs and PWD beliefs with respect to PWD following directions for taking their medications as prescribed, testing their blood sugar, and dealing with emotions associated with diabetes. For example, 70% of HCPs stated that they inquired "most of the time or always" whether the PWD who they treat had problems with their medications or the effects of their medications. In contrast, 30% of PWD reported they had been asked "most of the time or always" by a HCP about problems with medications and their effects. Approximately half of HCPs indicated that the PWD who they treat needed to improve "taking their diabetes medications as recommended" and "testing their blood sugar". Yet, PWD currently taking diabetes medications reported taking all medications, exactly as agreed with their HCPs, 6.1 to 6.4 days/week, testing blood sugar 4.2 to 4.9 days/week, and following a healthy eating plan approximately 5 days/week. Further details regarding PWD' perspectives can be found in the PWD companion paper.

The DAWN2 study is a reminder that, despite our efforts as HCPs at gaining and implementing self-management skills, we may continue to slip back into our traditional acute-care approach of offering advice and recommendations, and often still forget to ask the PWD for their opinions or offering choices to them. The DAWN2 data would suggest that an important advancement in care could be made by bringing the PWD and HCPs together to discuss self-management and the psychosocial issues in living with and managing diabetes.

The results of the DAWN2 study indicated that HCPs in Canada recognize the need for improved self-management in diabetes. However, to better support the PWD who they treat, HCPs reported that they require more support from psychological resources and greater opportunities for skills training in self-management skills and managing the psychological and emotional aspects of diabetes. The results of this survey also showed that HCPs were not consistently

assessing PWD for depression, which may be due to their uncertainty about managing the condition or a lack of knowledge about secondary referral services that are available for a person with diabetes who has signs of depression.

Attitudes about diabetes education are changing and HCPs are interested in exploring new approaches to patient education and support, including incorporating self-management principles into education programs and offering support outside of clinic hours such as telephone hotlines and personalized websites. In addition, HCPs could involve family members more in the diabetes care of the PWD, particularly as 69% of HCPs indicated that FM involvement was critical in good diabetes care, and FMs wanted to be more involved but were not certain how [19]. Further details about FMs and their perspectives on care for the PWD they live with are described in a companion paper.

The results of this study are encouraging, as they acknowledge that resources for diabetes education and management are available in Canada, but that diabetes should be given a higher priority or that Canada should be better organized for chronic-disease management including diabetes (72% of HCPs agree). The results also demonstrate that HCPs recognize the importance of self-management in diabetes, but may need additional training and support to better advise and support the PWD to self-manage. By identifying a shortage in psychological resources and skills training, the DAWN2 study provides the opportunity to identify next steps in improving diabetes care in Canada. All HCPs need to explore new avenues and approaches for supporting PWD and their families in implementing better self-management skills and thereby achieving improved physical and emotional health.

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