

# The Diabetes Educator

<http://tde.sagepub.com>

---

## US Nurses' Perceptions of Their Role in Diabetes Care: Results of the Cross-national Diabetes Attitudes Wishes and Needs (DAWN) Study

Linda M. Siminerio, Martha M. Funnell, Mark Peyrot and Richard R. Rubin  
*The Diabetes Educator* 2007; 33; 152  
DOI: 10.1177/0145721706298194

The online version of this article can be found at:  
<http://tde.sagepub.com/cgi/content/abstract/33/1/152>

---

Published by:

 SAGE Publications

<http://www.sagepublications.com>

On behalf of:



American Association of Diabetes Educators

**Additional services and information for *The Diabetes Educator* can be found at:**

**Email Alerts:** <http://tde.sagepub.com/cgi/alerts>

**Subscriptions:** <http://tde.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations** (this article cites 15 articles hosted on the SAGE Journals Online and HighWire Press platforms):  
<http://tde.sagepub.com/cgi/content/abstract/33/1/152#BIBL>

# US Nurses' Perceptions of Their Role in Diabetes Care

## Results of the Cross-national Diabetes Attitudes Wishes and Needs (DAWN) Study

---

Linda M. Siminerio, PhD, RN, CDE

---

Martha M. Funnell, MS, RN, CDE

---

Mark Peyrot, PhD

---

Richard R. Rubin, PhD, CDE

From the University of Pittsburgh Diabetes Institute, Pittsburgh, Pennsylvania (Dr Siminerio); University of Michigan, MI Diabetes Research Training Center, Ann Arbor, Michigan (Ms Funnell); Loyola College, Department of Sociology, Baltimore, Maryland (Dr Peyrot); and the Departments of Medicine (Dr Peyrot, Dr Rubin) and Pediatrics (Dr Rubin), Johns Hopkins University, Baltimore, Maryland.

Correspondence to Linda M. Siminerio, PhD, RN, CDE, University of Pittsburgh Diabetes Institute, Kaufmann Medical Building, 3471 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-3215 (simineriol@upmc.edu).

*Acknowledgment:* The DAWN study was initiated and funded by Novo Nordisk, whom we thank for providing access to the data presented in this article. The preparation of this article was supported by an unrestricted educational grant from Novo Nordisk. Also supported in part by grant NIH5P60 DK20572 and 1 R18 OK062323-01 from the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health. This research was also partially sponsored by funding from the US Air Force administered by the US Army Medical Research Acquisition Activity, Fort Detrick, Maryland, award number W81XWH-04-2-0030.

DOI: 10.1177/0145721706298194

### Purpose

The purpose of this study was to examine nurse and physician perceptions of nurse involvement and roles in diabetes care.

### Methods

The study used a cross-sectional design with face-to-face or telephone interviews of diabetes health care professionals in 13 countries from Asia, Australia, Europe, and North America. This article focuses on the data from US health care providers. The US sample included 51 generalist nurses, 50 diabetes specialist nurses, 166 generalist physicians, and 50 diabetes specialist physicians.

### Results

Nurses and physicians agreed that nurses should take a larger role in managing diabetes. Most common differences identified between nurses and physicians were that nurses provide better education, spend more time with patients, were better listeners, and knew their patients better than physicians. All nurses had a high perceived need for better understanding of psychosocial issues and were more likely than physicians to suggest helping patients to take responsibility for their care. Nurses more than physicians also said better communication was needed. Generalist nurses report that they act as intermediaries and facilitate patient appointment keeping. Specialist nurses talk to patients about self-management, teach medication management, have a higher level of involvement in

medication prescribing, and are more willing to take on additional responsibilities than generalist nurses.

## Conclusions

There is an increased need for more involvement by nurses, particularly specialist nurses, in diabetes care.

Caring for chronic disease requires multiple types of expertise. In diabetes care, multidisciplinary collaborative care by primary care practitioners collaborating with nurses, dietitians, endocrinologists, and other specialists has been shown to improve a variety of diabetes outcomes.<sup>1</sup> It has been proposed that health care organizations should carefully reconsider their current use of resources such as nurses and nutritionists in support of team care.<sup>2,3</sup>

Numerous studies have demonstrated the central role of nurses in improving health behaviors and patient outcomes in diabetes.<sup>2,4-10</sup> Many of the positive outcomes seen in visits with nurses may be due to better communication between the nurse and patient. Finding ways to improve outcomes is critically important because most diabetes patients are not achieving optimal blood glucose control,<sup>11,12</sup> leading to poor health outcomes.<sup>13</sup> Despite its importance, little is known about the current roles of nurses in diabetes care or the roles they could potentially play.

A large cross-national study, the Diabetes Attitudes Wishes and Needs (DAWN), was designed to identify attitudes, wishes, and needs among people with diabetes and care providers as the basis for national and international efforts to improve diabetes care.<sup>14,15</sup> Findings from DAWN provided important findings on patients' and providers' perceptions of diabetes care. The DAWN study also provided a unique opportunity to examine the attitudes and beliefs of nurse and physician groups about their current roles and several practice-related issues. In this article, data from US diabetes care providers who participated in DAWN are reported.<sup>14</sup> The objectives of this study are to examine specialist and generalist nurse perceptions of the role of nurses in diabetes care. In an attempt to gain a better understanding of the role of the nurse in the provision of diabetes care, several research questions are presented: (1) Are nurses willing to take on more responsibilities for diabetes care? (2) What is nurse involvement in diabetes management and medication prescribing? (3) Do

nurses perceive themselves to be better in terms of promoting self-management than physicians? (4) Do nurses as compared to physicians perceive a need for better understanding of psychosocial issues? (5) Do nurses as compared to physicians perceive a greater need for improved communication between and among health professionals and patients? (6) Are nurses who specialize in diabetes, as compared to generalist nurses more involved in diabetes management, facilitate self-management and participate in diabetes professional activities?

## Methods

### Study Design

The DAWN study was planned by a multidisciplinary international advisory group. The purpose of the DAWN study was to identify attitudes, wishes, and needs among patients with diabetes and care providers to facilitate the improvement of diabetes care at national and global levels. Patient data in the DAWN study included measures of sociocultural environment, life situation, initial adjustment to diabetes, diabetes history, health status, and attitudes toward treatment, as well as perceptions of access to care and quality of care. Nurses and physicians who provide diabetes care rated various aspects of their national health care systems and reported their own practice behaviors and treatment-related attitudes. For several measures, patients and providers provided parallel responses (eg, regarding patient self-management and adjustment to diabetes).

All data are cross-sectional self-reports, gathered in mid-2001 by structured interviews conducted either face to face or by telephone that took 30 to 50 minutes to complete. Survey questionnaires were developed after reviewing a variety of diabetes-related instruments and conducting focus groups with patients, providers, and policy makers in 8 countries.

The DAWN study was conducted according to the Joint Guidelines on Pharmaceutical Research Practice of the British Healthcare Business Intelligence Alliance and the Association of the British Pharmaceutical Industry. Verbal informed consent was obtained from all respondents, and participation was voluntary. Ethical approval for use of these data was obtained from the Institutional Review Board at Loyola College in Maryland (Human Subjects Research Committee).

### Participants

The study was conducted in 13 countries representing 11 regions: Australia, France, Germany, India, Japan,

Netherlands, Poland, Scandinavia (the sample was evenly divided among Denmark, Norway, Sweden), Spain, the United Kingdom, and the United States. Different sampling frames were used in different countries to generate heterogeneous samples from the entire country (except India, for which the sample was limited to 5 regions).

Participants included 3 independent samples: nurses, physicians, and patients. The patient sample consisted of adults with type 1 or type 2 diabetes mellitus, with a target of 500 patients per region. Because patient data are not reported in this article, further information regarding this sample is not reported here; a detailed description of the methods and respondents are provided elsewhere.<sup>14,15</sup> The provider samples were obtained from various professional directories and listings. Treating at least 5 persons with diabetes per month was an inclusion criterion, and only 1 respondent was selected from a practice. The nurse sample consisted of 1122 respondents, with a target of 100 respondents per region—approximately 50 diabetes specialists (those treating more than 50 persons with diabetes a month) and 50 generalists. The physician sample consisted of 2705 respondents, with a target of 250 per region—approximately 200 in primary care and 50 diabetes specialists (endocrinologists and diabetologists with 2 years experience and treating more than 50 diabetes patients per month).

This article focuses on the data from US health care providers. The US sample contained 51 generalist nurses, 50 diabetes specialist nurses, 166 generalist physicians, and 50 diabetes specialist physicians.

## Measures

Items were selected from the full set of survey questions to address the research questions. Where nurses and physicians provided parallel data, both are presented; for some measures, only nurses provided data. The main outcome measures are described below in terms of the research questions addressed.

*Research Question 1:* Are nurses willing to take on more responsibilities for diabetes care?

Nurse willingness to take on more responsibility for diabetes management is the score on the following question (score of response in parentheses): “I am going to read some statements about nurses taking more responsibility for patient treatment regimens. Please tell me which of these statements are closest to the way you feel. I am ready

to take on responsibility for patient treatment regimens now (=100), If I had additional training, I would like to take more responsibility for patient treatment regimens (=50), This is not the role of a nurse (=0).” The 10 persons who responded “I already have all the responsibility I need” did not receive a score on this measure.

Nurse perception of managing routine checks without supervision is the score on the following question: “Most diabetes nurses are able to manage the patients’ routine checks without supervision by a physician.” The item is scored from 0 to 100 with equal intervals across the 6-point Likert-type scale ranging from *fully disagree* to *fully agree*.

*Research Question 2:* What is nurse involvement in diabetes management and medication prescribing?

Nurse involvement in medication prescribing is the score on the following set of questions: “When seeing patients, are you permitted to change dosage of oral medication; change dosage of insulin; repeat-prescribe oral medication; repeat-prescribe insulin; initiate oral medication; and initiate insulin?” The score is the percentage of the 6 questions answered “yes.”

*Research Question 3:* Do nurses perceive themselves to be better in terms of promoting self-management than physicians?

The difference between nurse and physician patient care roles is the 14 most frequently cited responses to the following open-ended question: “In your opinion, what makes a nurse different from a physician in relation to caring for diabetes patients?” Multiple responses were permitted. Responses were categorized by a coder.

*Research Question 4:* Do nurses as compared to physicians perceive a need for better understanding of psychosocial issues?

Nurse and physician reports of their need for better psychosocial understanding of patients is the mean of 2 questions scored 0 to 100 on a 6-point Likert-type scale ranging from *fully disagree* to *fully agree*. The 2 questions include “Nurses/physicians need a better understanding of the various ethnic cultures” and “Nurses/physicians need a better understanding of the psychological consequences of diabetes.” Each respondent was asked about his or her own profession.

*Research Question 5:* Do nurses as compared to physicians perceive a greater need for improved communication between and among health professionals and patients?

Nurse and physician reports of ways to improve patient-provider communication are the responses to the following open-ended question: "In which ways do you think communication between you and your diabetes patients might be improved?" Multiple responses were permitted. Responses were categorized by a coder.

Nurse and physician reports of ways to improve communication among members of the diabetes care team are the responses to the following open-ended question: "In which ways do you think communication might be improved between you and other healthcare professionals involved in the management of people with diabetes?" Multiple responses were permitted. Responses were categorized by a coder.

*Research Question 6:* Are nurses who specialize in diabetes, as compared to generalist nurses more involved in diabetes management, facilitate self-management and participate in diabetes professional activities?

Need for more nurse involvement in diabetes care is the response to the question (scored 0-100 on a 6-point scale ranging from *fully disagree* to *fully agree*): "Basic training for nurses should include a greater emphasis on diabetes" and "There should be more diabetes training for nonspecialist nurses."

Nurses' involvement in patient care activities is the response to the set of questions listed in the chart: "I am going to read some of the responsibilities that a nurse may have in caring for diabetes patients. Please tell me the percentage of the diabetes patients you personally care for, for whom you . . . ."

Participation in professional diabetes activities (writing and speaking) is the mean of 5 questions scored 0 = *never* to 100 = *often*. "I am going to read out a few general activities that nurses may be involved in. Please tell me whether you are involved in each activity often, sometimes, seldom, or never; Speak at meetings arranged by the Diabetes Associations; Speak at other assemblies of diabetes patients; Speak on diabetes at organized meetings with other nurses; Write articles in magazines for diabetics; and Write articles in scientific magazines either alone or with colleagues."

## Statistical Analysis

Differences among respondent groups were tested using  $\chi^2$  or *F* test. No adjustment was performed for multiple tests.

Table 1

Nurse Perceptions of Nurse Involvement in Diabetes Care

	Specialists		Generalists	
	$\bar{x}$	SD	$\bar{x}$	SD
Willing to take on more responsibility for patient treatment**	73.8	29.7	57.1	28.9
Ability to manage patients' routine checks without supervision	66.4	27.8	61.6	31.5
Current level of involvement in medication prescribing†	33.0	32.2	23.2	26.5
Current professional diabetes activities (writing and speaking)***	40.8	19.7	20.3	23.1

Willingness to take on more responsibility is the score on the following question (score of response in parentheses): "I am going to read some statements about nurses taking more responsibility for patient treatment regimes. Please tell me which of these statements is closest to the way you feel. I am ready to take on responsibility for patient treatment regimes now (=100), if I had additional training, I would like to take more responsibility for patient treatment regimes (=50), This is not the role of a nurse (=0)." The 10 persons who responded "I already have all the responsibility I need" did not receive a score on this measure. Perception of managing routine checks without supervision is the score on the following question (scored 0-100 for a 6-point scale ranging from *fully disagree* to *fully agree*): "Most diabetes nurses are able to manage the patients' routine checks without supervision by a physician." Level of nurse involvement in medication prescribing is the score on the following set of questions: "When seeing patients, are you permitted to: Change dosage of oral medication, Change dosage of insulin, Repeat-prescribe oral medication, Repeat-prescribe insulin, Initiate oral medication, Initiate insulin?" The score is the percentage of the 6 questions answered "yes." Participation in professional diabetes activities (writing and speaking) is the mean of 5 questions (scored 0 = *never* to 100 = *often*): "I am going to read out a few general activities that nurses may be involved in. Please tell me whether you are involved in each activity often, sometimes, seldom, or never: Speak at meetings arranged by the Diabetes Associations, Speak at other assemblies of diabetes patients, Speak on diabetes at organized meetings with other nurses, Write articles in magazines for diabetics, Write articles in scientific magazines either alone or with colleagues."

†Marginally significant difference ( $P \leq .10$  and  $P \geq .05$ )

\*\*Statistically significant difference between specialists and generalists at the .01 level.

\*\*\*Statistically significant difference between specialists and generalists at the .001 level or beyond.

## Results

*Research Question 1:* Are nurses willing to take on more responsibilities for diabetes care?

Table 2

## Perceived Needs to Improve Diabetes Care

	Physician				Nurse				Total	
	Specialist		Generalist		Specialist		Generalist			
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD
Need for more nurse involvement in diabetes care (P <sup>***</sup> )	63.2	27.21	61.6	27.76	81.6	24.19	80.0	22.27	67.9	24.65
Need for better understanding of psychosocial aspects of diabetes (P <sup>***</sup> )	71.4	22.95	68.8	24.5	83.2	18.3	76.9	21.59	72.8	23.44
Need for better communication with others in diabetes management team (P <sup>†</sup> )	73.6	27.24	71.1	25.25	76.8	23.7	80.4	23.83	73.9	25.24
Need for more nurse diabetes training (P <sup>***</sup> , S <sup>***</sup> )	83.4	18.47	72.4	20.25	91.0	13.29	85.5	15.53	79.2	19.69

P = significant difference for profession (physician vs nurse); S = significant difference for specialist vs generalist. Need for more nurse diabetes training is the mean of 2 questions (scored 0-100 on a 6-point scale ranging from *fully disagree* to *fully agree*): "Basic training for nurses should include a greater emphasis on diabetes" and "There should be more diabetes training for nonspecialist nurses." Need for greater psychosocial understanding is the mean of 2 questions (scored 0-100 on a 6-point scale ranging from *fully disagree* to *fully agree*): "Nurses/physicians need a better understanding of the various ethnic cultures" and "Nurses/physicians need a better understanding of the psychological consequences of diabetes." Each respondent was asked about his or her own profession. Need for more nurse involvement in diabetes care is the response to the question (scored 0-100 on a 6-point scale ranging from *fully disagree* to *fully agree*) "Nurses should play a greater part in the screening and management of diabetes."

<sup>†</sup>Marginally significant difference ( $P \leq .10$  and  $P \geq .05$ ).

<sup>\*\*\*</sup>Statistically significant difference at the .001 level or beyond.

As shown in Table 1, most nurses are willing to take on more responsibility for diabetes management, with specialists expressing more willingness than generalists. More than half also report having the ability to manage routine checks without supervision.

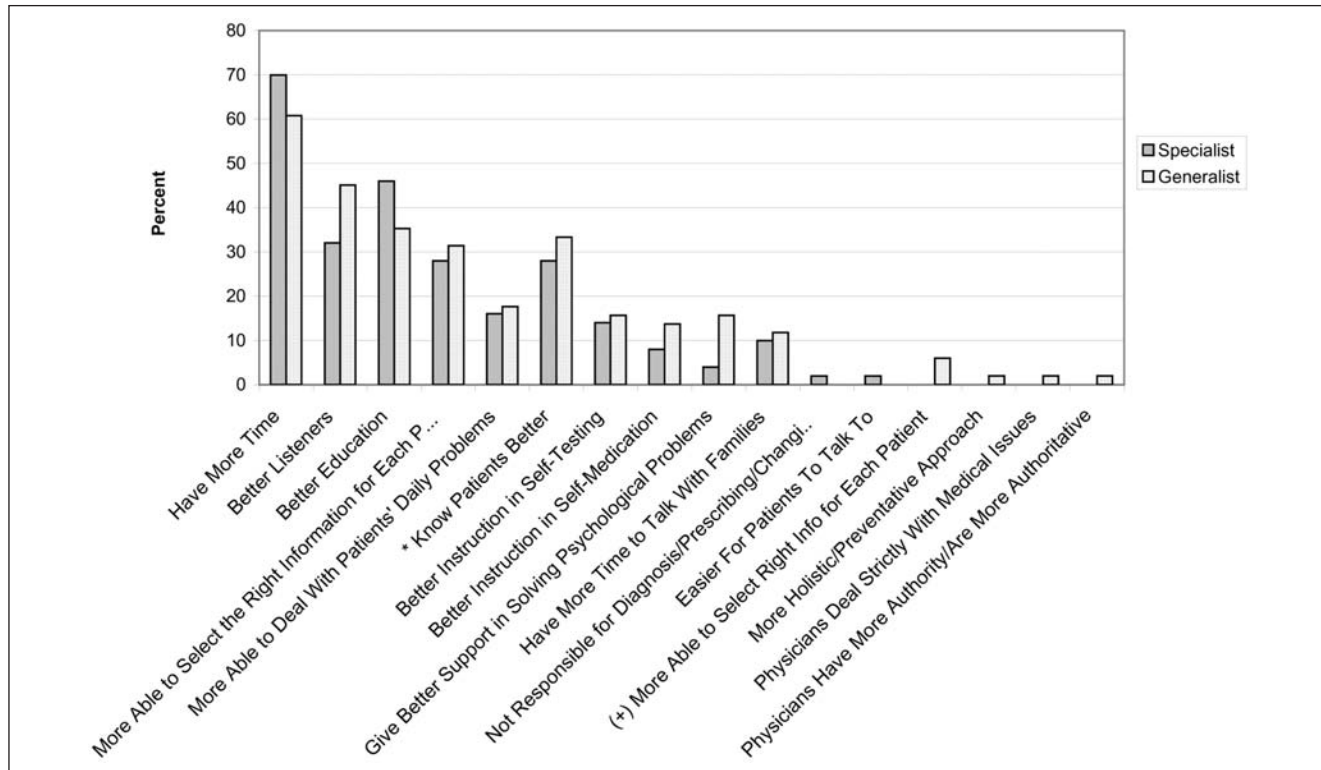
*Research Question 2:* What is nurse involvement in diabetes management and medication prescribing?

Interestingly, both physicians and nurses agree that nurses should take a larger role in managing diabetes, with nurses agreeing more strongly. However, nurses report a need for increased training. Specialist nurses more than generalist nurses and nurses more than physicians believe that generalist nurses need increased training in diabetes (Table 2).

*Research Question 3:* Do nurses perceive themselves to be better in terms of promoting self-management than physicians?

Figure 1 presents nurse perceptions of the differences between nurses and physicians in promoting diabetes self-management. The most commonly mentioned differences are that nurses have more time with patients than physicians, are better listeners, know patients better, and provide better education and more appropriate materials. The one statistically significant difference between generalist and specialist nurses' views is that generalists more than specialists report that they know their patients better than physicians.

*Research Question 4:* Do nurses as compared to physicians perceive a need for better understanding of psychosocial issues?



**Figure 1.** Nurse perceptions of the differences between nurses and physicians in providing diabetes care. Response to the set of questions listed in the chart: "I am going to read out some of the responsibilities that a nurse may have in caring for diabetes patients? Please can you tell me the percentage of the diabetes patients you personally care for, for whom you . . . ?" += marginally significant difference ( $P \leq .10$  and  $P \geq .05$ ). Statistically significant difference between specialists and generalists at the \*.05 level, \*\*.01 level, and \*\*\*.001 level or beyond.

Table 2 presents information on physician and nurse perceptions about what is needed to improve care for people with diabetes. Nurses reported a higher perceived need for better understanding of patients' psychosocial issues than physicians.

*Research Question 5:* Do nurses as compared to physicians perceive a greater need for improved communication between and among health professionals and patients?

Nurses endorsed a number of strategies for improving patient-provider communication more than physicians did, including more frequent appointments, getting patients to take responsibility, and talking to patients more. Nurses were less likely than physicians to suggest more electronic information. Specialist nurses were more likely than all others to suggest simply talking to patients more (Table 3).

More nurses than physicians said better communication with others in the diabetes management team was needed

to improve care. As shown in Table 4, nurses endorsed a number of strategies to improve communication between providers more often than physicians, including better access to more health care professionals, more respect among health care professionals, and more time with patients. Nurses were less likely than physicians to suggest more effective written/electronic communication.

*Research Question 6:* Are nurses who specialize in diabetes, as compared to generalist nurses more involved in diabetes management, facilitate self-management and participate in diabetes professional activities?

Nurse reports of their patient roles are presented in Figure 2. Specialist nurses more often than generalists talk to their patients about self-management, teach patients about medication management, talk to patients' families, and set up education programs at hospitals. Findings presented in Table 1 show that specialist nurses also have a higher level of involvement in

Table 3  
Endorsement of Strategies for Improving Patient-Provider Communication

	Physician, %		Nurse, %		Overall, %
	Specialist	Generalist	Specialist	Generalist	
Longer/more convenient appointment time	32.0	30.7	26.0	35.3	30.9
More frequent visits/keeping appointments (P <sup>**</sup> )	8.0	16.3	24.0	27.5	17.9
Educate/train patients better	18.0	19.3	14.0	15.7	17.7
Getting patient to take responsibility (P <sup>**</sup> )	4.0	5.4	14.0	13.7	13.9
More information to give patients (S <sup>†</sup> )	6.0	13.9	4.0	9.8	10.4
Talk to patients more (PS <sup>†</sup> )	4.0	10.8	16.0	9.8	10.4
Better/clearer information	6.0	10.2	8.0	5.9	8.5
Better patient record/treatment book (P <sup>*</sup> )	6.0	11.5	0.0	1.9	7.3
More funding/financial support (S <sup>**</sup> )	12.0	4.8	12.0	0.0	6.3
Electronic information (videos, Internet, etc) (P <sup>*</sup> )	6.0	4.2	0.0	0.0	3.2
Organize discussion/support groups	0.0	4.8	2.0	0.0	2.8
Easier health care professional access/more staff	0.0	2.4	4.0	3.9	2.5
More diabetes/specialist nurses	2.0	4.2	0.0	0.0	2.5
Deal with language/ethnic difficulties	2.0	0.6	6.0	1.9	1.9
Involve/get help from family	2.0	2.4	2.0	0.0	1.9
Telephone communication	2.0	1.2	0.0	3.9	1.6

P = significant difference for profession (physician vs nurse); S = significant difference for specialist vs generalist; PS = significant interaction for profession and specialist/generalist. Response to open-ended question "In which ways do you think communication between you and your diabetes patients might be improved?" Multiple responses permitted. Responses were assigned into categories by coder.

<sup>†</sup>Marginally significant difference ( $P \leq .10$  and  $P \geq .05$ ).

<sup>\*</sup>Statistically significant difference at the .05 level.

<sup>\*\*</sup>Statistically significant difference at the .01 level.

medication management prescribing. As one might expect, nurses who are diabetes specialists are twice as likely to engage in professional activities that include writing and speaking.

## Conclusions

The purpose of the DAWN study was to identify attitudes, wishes, and needs among people with diabetes and

Table 4

## Endorsement of Strategies for Improving Communication Among Health Care Professionals

	Physician, %		Nurse, %		Overall, %
	Specialist	Generalist	Specialist	Generalist	
More efficient written/electronic exchange of information (P*)	40.0	44.6	32.0	23.5	38.5
Better access to/more health care professionals (P†)	14.0	12.1	26.0	15.7	15.1
More respect/teamwork between health care professionals (P*)	12.0	10.8	28.0	15.7	14.5
Regular meetings/seminars	10.0	11.5	18.0	19.6	13.5
More time (P***)	6.0	6.0	18.0	25.5	11.0
More training for self and others (S*)	14.0	3.6	8.0	5.9	6.3
More research/information on diabetes	6.0	3.0	6.0	3.9	4.1
More funding (government or insurance)	4.0	3.6	0.0	5.9	3.5

P = significant difference for profession (physician vs nurse); S = significant difference for specialist vs generalist. Response to open-ended question "In which ways do you think communication might be improved between you and other health care professionals involved in the management of people with diabetes?" Multiple responses permitted. Responses were assigned into categories by coder.

†Marginally significant difference ( $P \leq .10$  and  $P \geq .05$ ).

\*Statistically significant difference at the .05 level.

\*\*\*Statistically significant difference at the .001 level or beyond.

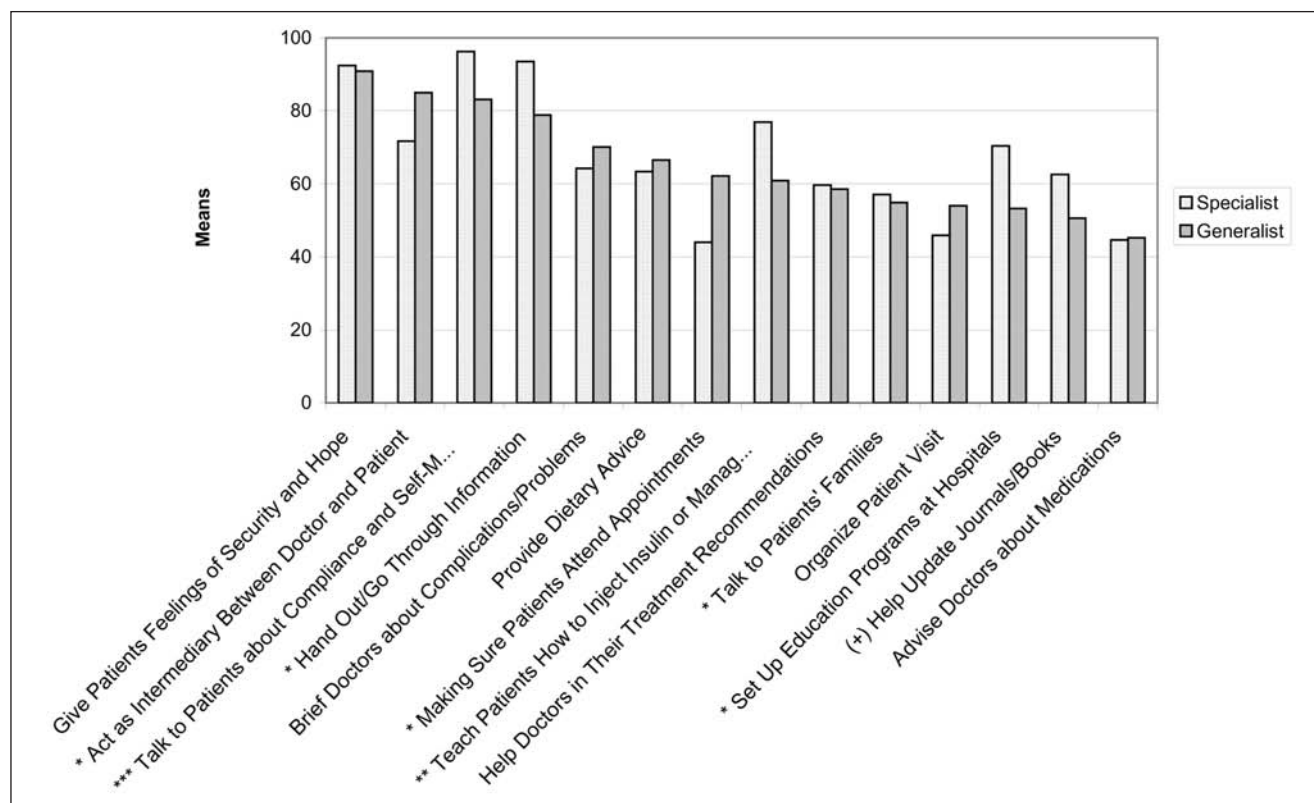
care providers as the basis for efforts to improve diabetes care.<sup>16,17</sup> The DAWN study also provided a unique opportunity to examine the perceptions, current roles, and practice-related issues of nurse and physician groups.

While most nurses were willing to take on additional responsibility in diabetes care, there were some differences between the specialist and generalist nurses with regard to these responsibilities. Specialist nurses functioned at a more advanced level and reported taking a more active role in facilitating both self-management and medication management than generalist nurses did. While it is not known if the specialist nurses were certified diabetes educators (CDEs), these findings are in keeping with a recent survey about the evolving practice of diabetes educators.<sup>18</sup> In that study, CDEs were more likely to provide advanced self-management education (eg, pump therapy) and medication management services when compared with noncertified diabetes educators. The specialist nurses further indicated

they were more willing to take on additional responsibility when compared to generalist nurses and were more likely to be involved with professional education and writing, which further validates their roles as leaders in the profession.

Despite their willingness, only about one third of the specialist nurses were currently involved in medication management. Given the number of patients with diabetes and the limited time both generalist and specialist providers have to spend during a routine visit, these data point out that specialist nurses are often underutilized and that their skills are not fully used in many situations.

Generalist and specialist nurses agreed that a major role for nurses is to provide patients with security and hope and that they are better able to provide education than physicians. However, generalist nurses were significantly more likely to simply act as intermediaries between patients and physicians and make sure that patients kept appointments. On the other hand, specialist nurses described their roles as



**Figure 2.** Nurses' perceptions of their role in patient diabetes care. Top 14 responses to the open-ended question "In your opinion, what makes a nurse different from a physician in relation to caring for diabetes patients?" Multiple responses permitted. Responses were assigned into categories by coder. + = marginally significant difference ( $P \leq .10$  and  $P \geq .05$ ). Statistically significant difference between specialists and generalists at the \*.05 level, \*\*.01 level, and \*\*\*.001 level or beyond.

talking with patients about self-management and teaching patients how to manage medications. These differences are clearly a reflection of their roles but may also suggest that the generalists are also not being fully used to provide education or ongoing support for psychosocial issues and behavior change. Generalist nurses are often in an ideal practice situation to give this type of self-management support because of their ongoing contact with patients, while specialist nurses frequently have contact only during an education program.

One of the key findings of the DAWN study was that the people with diabetes surveyed believed they need additional help and support with the psychosocial issues presented by diabetes. They further indicated that their health care professionals often do not meet this need.<sup>14</sup> While all of the US professional groups believed they need a better understanding of the psychosocial aspects of diabetes, nurses rated this significantly higher than physicians did, with specialist nurses most likely to agree with this statement. Both groups of nurses said that they have more time, know the patients

better than physicians do, and are better listeners, which are among the basic skills needed to provide the type of psychosocial support many patients need. However, the time nurses spend with patients on these issues is often undervalued, underutilized, and rarely reimbursed. Given the lack of specialists (psychologists, psychiatrists, and social workers) readily available in most clinical settings, psychosocial support is another example of a critical role nurses can assume that needs further recognition and development.

Nurses were more likely to indicate that there needed to be improvements in communication between professionals and their patients and among professional team members than physicians. Because the DAWN study found that better patient and professional communication resulted in better outcomes,<sup>16</sup> this issue is critically important given the current state of diabetes outcomes in the United States. While all groups agreed that longer appointments were needed, nurses were significantly more likely to believe that more frequent visits, more

time spent talking with patients, and helping patients assume more responsibility would improve communication. On the other hand, physicians were more likely to believe that better electronic information would improve patient-provider communication. These differences may be indicative of professional training, available time, and/or sources for personal and professional satisfaction. Because nurses have different responsibilities and expectations, they may prefer to spend time establishing relationships with patients, while physicians may prefer information that allows them to diagnose and treat the patient more efficiently and effectively.

Physicians were more likely than nurses to believe that more efficient written and electronic records would improve communication among and between health professionals, although this was highly rated among all groups. Specialist nurses, however, were more likely than the other groups to indicate that better access and greater respect were needed to improve communication among team members. Because many diabetes nurse educators work within a program rather than with a specific physician, their contact with individual providers may be limited. Professional respect is an area in which specialist nurses continue to struggle, and as a result, many believe that their expertise is not valued by or is a threat to physicians. This lack of respect contributes to the underutilization of their skills, particularly in the areas of medication management and addressing psychosocial issues. Both individual nurses and nursing organizations need to take a stronger stand in promoting nurses as essential members of the diabetes care team.

As might be expected, there were some striking differences between the specialist and generalist groups. Specialist physicians were the largest group recommending additional training for themselves and others. Both nurse and physician specialists believed improved funding would enhance patient and provider communication. Financial concerns can be a constraint for making referrals to specialty care or educators and/or may limit the amount of time specialists have to spend in both the initial and follow-up care and education. The belief among generalists that additional educational materials were needed may result from a lack of knowledge about available materials, lack of access, or a belief about their effectiveness compared with specialists.

One of the surprising responses was that none of the groups suggested that additional specialist nurses would

help improve patient-provider communication, with no nurses in either group choosing this response. However, most participants in the DAWN study reported a general need for more diabetes specialist nurses<sup>16</sup>; a finding replicated within the US sample with 98% agreement. This need has likewise been cited by physicians in other studies.<sup>19-21</sup>

While this study offered many opportunities, there were limitations. DAWN was designed as a multinational study, so the survey had to be relevant for practices in a variety of countries and health systems. Thus, dietitians were not included because of the limited number of and access to these professionals in many countries. In the United States, where specialist dietitians often assume many educational and care responsibilities, this limits the information derived from the study to nurses, rather than the more inclusive educational team.

An additional limitation is that the level of training or certification was not assessed. Specialization was based on the number of patients with diabetes seen in a week, instead of delineating specialists such as CDEs, board-certified advanced clinical diabetes management, or through other evidence of advanced training that would make the results more applicable to a US sample. In addition, these data represent the perceptions of a relatively small group of generalist and specialist nurses and physicians, further limiting its generalizability.

While the DAWN study was not conducted specifically to compare and contrast nurse and physician or specialist and generalist beliefs, attitudes, and responsibilities in diabetes, this study does offer insight into nursing roles and tasks and provides guidance for future studies of this important topic.

## Application to Practice

The DAWN study identified 5 key goals that need to be accomplished to improve outcomes among patients with diabetes. These are the following<sup>16</sup>:

- reduce the barriers to effective therapy,
- promote effective self-management,
- improve psychological care for people with diabetes,
- enhance communication between people with diabetes and health care providers, and
- promote improved communication and coordination between health care providers.

Clearly, both generalist and specialist nurses are stakeholders in this process. While they need to work

more effectively together, with their individual patients and with other stakeholders, they also need to align themselves with people who have diabetes, patient and professional organizations, policy makers, legislators, industry, and payers so that the message of DAWN can become a reality.

## References

1. Wagner EH, Glasgow RE, Davis C, et al. Quality improvement in chronic illness care: a collaborative approach. *Jt Comm Health Care Qual.* 2001;27:63-80.
2. Bodenheimer T, MacGregor K, Stothart N. Nurses as leaders in chronic care. *BMJ.* 2005;330:612-613.
3. Norris SL, Nichols PJ, Caspersen CJ, et al. The effectiveness of diabetes and case management for people with diabetes: a systematic review. *Am J Prev Med.* 2002;22:15-38.
4. Davidson MB. Effect of nurse-directed diabetes care in a minority population. *Diabetes Care.* 2003;26:2281-2287.
5. Taylor CB, Houston-Miller N, Reilly KR, Greenwald G, Cuning D, Deeter A, Abascal L. Evaluation of a nurse-care management system to improve outcomes in patients with complicated diabetes. *Diabetes Care.* 2003;26:2281-2287.
6. Philis-Tsimikas A, Walker C, Rivard L, et al. Improvement in diabetes care of underinsured patients enrolled in Project Dulce: a community-based, culturally appropriate, nurse care management and peer education diabetes care model. *Diabetes Care.* 2004;27:110-115.
7. Polonsky W, Earles J, Smith S, et al. Integrating medical management with diabetes self-management training. *Diabetes Care.* 2005;26:3048-3053.
8. Aubert R, Herman W, Waters J, et al. Nurse case management to improve glycemic control in diabetic patients in a health maintenance organization. *Ann Intern Med.* 1998;129:605-612.
9. Siminerio L, Piatt G, Zgibor J. Implementing the chronic care model for improvements in diabetes care and education in a rural primary care practice. *Diabetes Educ.* 2005;31:225-234.
10. Peters AL, Legoretta AP, Ossorio RC, Davidson MB. Quality of outpatient care provided to diabetic patients: a health maintenance organization experience. *Diabetes Care.* 1996;19:601-606.
11. Wallace TM, Mathers DR. Poor glycemic control in type 2 diabetes: a conspiracy of disease, suboptimal therapy and attitude. *QJM.* 2000;93:69-74.
12. Matthews DR. The natural history of diabetes-related complications: the UKPDS experience. *Diabetes Obes Metab.* 1999;1(suppl 2):S7-S13.
13. Funnell MM, Peyrot MF, Rubin RR, Siminerio LM. Steering toward a new DAWN in diabetes management: using diabetes nurse educators in primary care for patient empowerment, psychological support, and improved outcomes. *Diabetes Educ.* 2005;31(suppl):1-18.
14. Peyrot M, Rubin RR, Lauritzen T, Snoek F, Matthews D, Skovlund S, on behalf of the International DAWN Advisory Panel. Psychosocial problems and barriers to improved diabetes management: results of the cross-national Diabetes Attitudes, Wishes and Needs (DAWN) study. *Diabet Med.* 2005;22:1379-1385.
15. Peyrot M, Rubin RR, Lauritzen T, et al, on behalf of the International DAWN Advisory Panel. Resistance to insulin therapy among patients and providers: results of the cross-national Diabetes Attitudes, Wishes and Needs (DAWN) study. *Diabetes Care.* 2005;28:2673-2679.
16. Skovlund SE, Peyrot M. DAWN International Advisory Panel: lifestyle and behavior: the Diabetes Attitudes, Wishes and Needs (DAWN) program: a new approach to improving outcomes of diabetes care. *Diabetes Spectrum.* 2005;18:136-142.
17. Alberti G. The DAWN (Diabetes Attitudes, Wishes and Needs) study. *Practical Diabetology International.* 2002;19:22-24.
18. Barlow S, Cream J, Heizler A, Mulcahy K, Springer J. Diabetes educators: assessment of evolving practice. *Diabetes Educ.* 2005;31:359-372.
19. Shah B, Hux J, Laupacis A, Zinman B, van Walraven C. Clinical inertia in response to inadequate glycemic control. *Diabetes Care.* 2005;28:600-606.
20. Wagner E. The role of patient care teams in chronic disease management. *BMJ.* 2000;320:569-572.
21. Garcia-Patterson A, Martin E, Ubeda J, et al. Nurse-based management in patients with gestational diabetes. *Diabetes Care.* 2003;26:998-1001.