

# Cultural Competence in Diabetes Mellitus Care: An Urgent Need

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## ABSTRACT

**Background:** Multicultural societies exist worldwide. Two important challenges can be appreciated in this scenario. Minority populations, due to a combination of genetic and lifestyle factors, have a particularly high risk for developing type 2 diabetes mellitus (DM). In addition, the quality of health care provided to minority populations, including that for DM, has lagged behind that provided to the white population. Because multiple medical, social, and cultural factors influence the development and progression of type 2 DM, management of patients becomes even more challenging if health care providers cannot identify and address the many contributing factors.

**Objective:** The objective of this article was to raise awareness about the most common social and cultural factors that may influence the development of type 2 DM, progression of the disease, and adherence to treatment plans in patients from culturally diverse populations.

**Methods:** A PubMed search of English-language articles published primarily between 1996 and 2006 was conducted using the search terms *Latino*, *Hispanic*, *culture*, and *diabetes*, and a list of social and cultural factors associated with type 2 DM was created based on relevant articles and on the author's expertise and experience in the Latino Diabetes Initiative at the Joslin Diabetes Center.

**Results:** There is increasing evidence that social and cultural factors such as body image, educational level, fears, general family integration and support, health literacy, language, myths, and nutritional preferences, among others, may affect the success of the physician-patient relationship and influence patients' adherence to treatment. Specific strategies to help clinicians remember to address multiple factors in the day-to-day management of patients with type 2 DM who are from culturally diverse populations include asking questions about patients' personal goals, ascertaining what behaviors they have adopted from mainstream culture, understanding how family ties may affect DM care and prevention, and being aware of patients' educational level when implementing any educational activity.

**Conclusions:** The standards of DM care apply to every individual with this disease and should continue to be the core of every clinician's practice. However, improving health care providers' cultural competence may help improve the quality of care provided to minority groups and may ultimately reduce health care disparities. Increased cultural competence may also improve patient-provider trust and communication, as well as help patients adhere to prevention and treatment plans. (*Insulin*. 2007;2:80-91) Copyright © 2007 Excerpta Medica, Inc.

**Key words:** culture, cultural competence, Latino, Hispanic, type 2 diabetes mellitus.

## INTRODUCTION

Multicultural societies define our world. The United States contains multiple racial and ethnic groups. Although white Americans account for three quarters of the population, increasing numbers of other racial and ethnic groups contribute to making many cities a true mosaic of heterogeneous cultures.<sup>1</sup> The minority groups with the highest numbers of people in the United States are Latinos/Hispanics, blacks, American Indians, Alaska natives, Asian and Pacific Islanders, Southeast Asians, and Arabs. Most of these groups will continue to increase at a higher rate than the non-Hispanic white population.<sup>1</sup>

All individuals share biological, psychological, spiritual, and social elements. At the same time, all are different enough in some or most of these elements to make each per-

son unique. An evident and closer share of genetically transmitted physical characteristics, history, nationality, religion, language, traditions, and cultural heritage gives the basis to our integration in races or ethnic groups. *Race*, defined as a group of persons who come from the same ancestor,<sup>2</sup> refers primarily to genetically transmitted physical characteristics, whereas *ethnicity* is a broader concept that relates to large groups of people classed according to common racial, national, tribal, religious, linguistic, or cultural origin or background.<sup>2</sup> Therefore, ethnicity alludes to a perceived cultural distinctiveness, expressed in language, music, values, art, styles, literature, family life, religion, ritual, food, naming, public life, and material culture.

A good example to distinguish race from ethnicity is the nature of the Latino or Hispanic population. The term *Latino*

or *Hispanic* represents ethnicity, not race. Racially speaking, Latinos have 3 possible genetic backgrounds: white, black, and/or Indian. These genetic backgrounds are seen in any possible combination among Latinos, creating a very heterogeneous group. However, Latinos have multiple shared linguistic, traditional, and cultural values.<sup>3</sup>

In the United States, as in many countries around the globe, minority groups usually lag behind the predominant group in multiple health care aspects.<sup>4</sup> The Institute of Medicine, a private, nonprofit organization that provides health policy advice under a congressional charter granted to the National Academy of Sciences, reported that clear health care disparities exist when a large number of outcomes are compared, including some related to diabetes mellitus (DM) care, between the white population and minority groups.<sup>4</sup> In general, minorities receive a lower quality of DM care than do white Americans. It is important to mention that these disparities are not accounted for by level of access to care, socioeconomic status, age, stage of presentation, or existing comorbidities and can be found in multiple health care settings (eg, managed care; public, private, teaching, and community centers).<sup>4</sup>

If level of access to care or socioeconomic status does not account for these health disparities, what factors contribute to this discrepancy? There is no simple answer, and many elements add to this phenomenon. Multiple patient- and provider-based factors collide in clinical encounters in a health care system that is often not oriented to cultural differences. The reader should keep in mind that although the immediate implication of these health care disparities has been to develop strategies to improve the quality of care provided to minority groups, we should see this phenomenon in a much wider way. At the same time that providers work toward improving the lives of *all* people with DM, a fundamental question emerges: How can providers improve the quality of DM care given to people who belong to a different racial/ethnic group and, thus, culture from their own?

The objective of this article was to raise awareness about the most common social and cultural factors that may influence the development of type 2 DM, progression of the disease, and adherence to treatment plans in patients from culturally diverse populations.

## MATERIALS AND METHODS

A PubMed search of English-language articles published primarily between 1996 and 2006 was conducted using the search terms *Latino*, *Hispanic*, *culture*, and *diabetes*, and a list of social and cultural factors associated with type 2 DM was created based on relevant articles and on the author's expertise and experience in the Latino Diabetes Initiative at the Joslin Diabetes Center, Boston, Massachusetts.

## TYPE 2 DIABETES MELLITUS IN MINORITIES: GENES OR CULTURE?

### Biological Factors

Type 2 DM is a heterogeneous disease that results from the combination of a genetic predisposition and environ-

mental factors.<sup>5</sup> The "thrifty gene" hypothesis has emerged as a possible explanation for some minority groups' increased genetic tendency to develop type 2 DM. This theory, first proposed in 1962, suggests that populations of indigenous people who experienced alternating periods of feast and famine gradually adapted by developing a way to store fat more efficiently during periods of plenty to better survive famine.<sup>6</sup> However, now that food supplies are more constant and abundant, this genetic adaptation has become detrimental, leading to an increased prevalence of obesity and type 2 DM in certain minority populations.<sup>6</sup> In the United States, most of these minority populations will continue to grow more rapidly than the non-Hispanic white population (Table I).<sup>1</sup>

A common manifestation of this genetic predisposition in minority groups appears to be the presence of insulin resistance in peripheral tissues. This phenomenon has been demonstrated even in lean, healthy individuals and in children and adolescents from some of these groups.<sup>7-9</sup> In addition, it is now recognized that abdominal obesity plays a major role in the development of type 2 DM and cardiovascular disease (CVD). In particular, visceral fat is related to insulin resistance and endothelial dysfunction.<sup>10</sup> Most minority groups, except blacks, tend to accumulate more visceral fat than white Americans, at any degree of obesity.<sup>8</sup> Although we still need to better understand the mechanisms that lead to differential fat accumulation, increased levels of intra-abdominal or visceral fat lead to multiple metabolic and vascular derangements in any racial/ethnic group. Although blacks appear to have lower visceral fat levels than white Americans, their risk for type 2 DM is higher, most likely due to genetically determined insulin resistance in peripheral tissues and, in some individuals, a rapid decline in  $\beta$ -cell function.<sup>11</sup>

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### Social and Cultural Factors

Social and cultural factors have undoubtedly increased the risk for obesity and DM in these populations. The common elements of "westernization" that increase the risk for obesity, DM, and related diseases include a diet higher in total calories and fat but lower in fiber, as well as less need to expend energy because of labor-saving devices. In addition, each group has preferred foods and lifestyle practices that play a role in the development and treatment of DM.<sup>8</sup> In addition to an inadequate meal plan and decreased physical activity, multiple social and cultural factors may influence not only the development of type 2 DM but also its treatment.

**Table I.** Projected population of the United States, by race and Hispanic origin: Year 2000 to 2050.<sup>1</sup>

Population and Percentage by Race or Hispanic Origin	2000	2010	2020	2030	2040	2050
<b>Population*</b>						
Total	282,125	308,936	335,804	363,584	391,946	419,854
White alone	228,548	244,995	260,629	275,731	289,690	302,626
Black alone	35,818	40,454	45,365	50,442	55,876	61,361
Asian alone	10,684	14,241	17,988	22,580	27,992	33,430
All other races <sup>†</sup>	7,075	9,246	11,822	14,831	18,388	22,437
Hispanic (of any race)	35,622	47,756	59,756	73,055	87,585	102,560
White alone, not Hispanic	195,729	201,112	205,936	209,176	210,331	210,283
<b>Population, %</b>						
Total	100.0	100.0	100.0	100.0	100.0	100.0
White alone	81.0	79.3	77.6	75.8	73.9	72.1
Black alone	12.7	13.1	13.5	13.9	14.3	14.6
Asian alone	3.8	4.6	5.4	6.2	7.1	8.0
All other races <sup>†</sup>	2.5	3.0	3.5	4.1	4.7	5.3
Hispanic (of any race)	12.6	15.5	17.8	20.1	22.3	24.4
White alone, not Hispanic	69.4	65.1	61.3	57.5	53.7	50.1

\*Resident population in thousands.

<sup>†</sup> Includes American Indian and Alaska native alone, native Hawaiian and other Pacific Islander alone, and ≥2 races.

Social and cultural factors discussed in this article (**Table II**) are arranged in alphabetical order, not in order of importance. Some important factors may therefore be included in

another category for simplicity. The primary purpose of the list is to help clinicians remember to address multiple factors in the day-to-day management of patients with type 2 DM.

**Table II.** Main factors to be considered in a culturally oriented clinical encounter and/or educational program in patients with diabetes mellitus from diverse racial and ethnic groups.

- Acculturation
- Body image
- Cultural competence
- Depression
- Educational level
- Fears
- General family integration and support
- Health literacy
- Individual and social interaction
- Judgment and beliefs about the disease
- Knowledge about the disease
- Language
- Myths
- Nutritional preferences
- Other types of medicine (alternative)
- Physical activity
- Quality of life
- Religion and faith
- Socioeconomic status

**Acculturation**

*Culture* refers to the behavior patterns, beliefs, arts, and all other products of human work and thought, as expressed in a particular community. *Acculturation* refers to the adoption of some specific elements of one culture by a different cultural group. For immigrants to the United States, it relates to the integration of multiple preferences and behaviors from mainstream culture. No uniform instrument to assess acculturation exists. Throughout the literature, various categories of acculturation can be identified: assimilation (abandonment of native cultural identity and adoption of the values and norms of the larger society), integration (maintenance of ethnic cultural integrity at the same time as becoming an integral part of a larger society), separation (self-imposed withdrawal from the larger society while preserving the native culture), and marginalization (being out of cultural contact with both traditional culture and the larger society).<sup>12</sup>

Self-identification, behavior, and language skills are common elements that may allow classification of individuals into the preceding categories. Many reports consider language preference as a good estimate of the degree of acculturation of any given individual.<sup>12</sup> Whereas conflicting results exist in the literature as to whether high acculturation translates into better or worse health care behaviors, some

reports highlight the fact that groups with low acculturation are more likely to be without a routine place for health care, have no health insurance, and have low levels of education.<sup>12</sup> These factors are clearly related to health care outcomes. A recent report of the 1999–2002 National Health and Nutrition Examination Survey showed that Hispanic individuals with low acculturation, measured by language, were more likely to have DM and more likely to have diabetic peripheral neuropathy as a chronic complication even after controlling for a variety of demographic characteristics, including health insurance and education.<sup>13</sup>

It is important to remember that a high acculturation level can also be associated with higher rates of DM, perhaps through the adoption of a more “diabetogenic” lifestyle—that is, by eating higher portions of foods richer in carbohydrates and fats and by becoming more sedentary. It is also true that the acculturation process can lead to the adoption of a healthier lifestyle. Ultimately, individuals choose which behaviors and preferences to adopt.<sup>14,15</sup> Health care providers should openly ask patients about behaviors that they have adopted from mainstream culture.

### **Body Image**

The concept of ideal body weight may vary among individuals within and across racial and ethnic groups. Although it would be erroneous to assume that some people prefer to be overweight, the ideal weight that people have conceptualized may be different. In some groups, being robust and slightly overweight has been considered equivalent to being well nourished and financially successful.<sup>3</sup> Children are often encouraged to “eat well” and finish their entire meal. For some groups, achieving a higher socioeconomic status translates into the possibility of eating more, not necessarily eating better. As an example, a study in black women with type 2 DM found that most participants preferred a middle-to-small body size but indicated that a middle-to-large body size was healthier. They also said that a large body size did result in some untoward social consequences.<sup>16</sup> When discussing weight-loss strategies, it is therefore crucial that clinicians ask patients about their personal goals.

### **Cultural Competence**

Cultural competence is defined by the American Medical Association as the knowledge and interpersonal skills that allow providers to understand, appreciate, and work with individuals from cultures other than their own. It involves an awareness and acceptance of cultural differences, self-awareness, knowledge of the patient’s culture, and adaptation of skills.

Although no randomized clinical trial has been conducted to demonstrate that DM control and/or complications are improved by a group of health care providers with higher cultural competence compared with a group with a lower level, it appears clear that cultural competence can lead to a much more pleasant and productive health care provider–patient interaction.<sup>17</sup> In the field of DM, it may be

particularly relevant because disease control is greatly determined by effective lifestyle and behavior modification.

These changes are more likely to be implemented if the patient has developed a good rapport with his or her health care provider, an aspect that can be improved through cultural competence. Some individuals have completely ignored the importance of this new area of health care practice, but it has slowly become more appealing and interesting to many.<sup>17</sup> In fact, due to the growing number of minorities in the United States, the fact that they suffer from higher rates of DM and its complications, and the already mentioned lower quality of DM care in these groups, the need to improve the skills of health care providers in the area of cultural competency has been more recognized than ever before. Currently, 2 states—New Jersey and California—require physicians to obtain some annual continuing medical education credits in programs addressing cultural aspects in health care. It is anticipated that more states will join the effort to disseminate accurate information on how to improve the lives of people with DM from various cultures.

Patients and health care providers have a different “agenda” in their mind in any given clinical encounter. Both the patient and the health care provider must become more open and receptive to the other person’s point of view regarding the disease process and treatment strategies. Ultimately, any therapeutic plan is an agreement or “contract” between 2 parties. Both must recognize and acknowledge their responsibility and commitment to move forward. Unfortunately, many health care providers blame the patient for not following a treatment plan. It is disappointing to hear many professionals refer to patients as *noncompliant*. Although it is true that some patients may not adhere to their treatment plan, perhaps it is fairer and more helpful to say: “I have not found the best way to interact with my patient so that some specific behavioral changes occur.”

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It is common to create stereotypes in clinical encounters. However, creating a stereotype about a patient based on his or her racial/ethnic or cultural background is likely to endanger the clinical encounter. It is helpful to be aware of the most common cultural aspects that may influence DM care in any group, but a productive clinical encounter must focus on a particular patient’s characteristics and preferences.

Some interesting research has started to emerge in the area of cultural competence in DM care. A study of Mexican Americans found that knowledge of cultural factors per se and exposure to Mexican Americans in practice did not directly facilitate culturally competent care.<sup>18</sup> Rather, such care is most strongly predicted by recognition that cultural

factors and awareness of personal biases are important. This finding supports the notion that both providers and patients should be aware of their own concepts and beliefs and should be ready to listen and acknowledge the other person's agenda.

These results further support medical education that does not focus solely on basic information about DM in any given cultural group, but also explores the most common factors that influence DM care from the patient's and the health care provider's perspective. On the other hand, patients also need to raise their cultural awareness. Patients should feel comfortable receiving their health care from a provider who has a different cultural background. Although this can be a more challenging task, it may happen naturally as the result of a better and more culturally oriented interaction with health care providers.

### Depression

Depression has long been recognized as an entity frequently associated with DM. It is very common in minority populations who have the disease.<sup>8</sup> In addition, depression is a powerful predictor of poor health outcomes in people with DM, as has been demonstrated in Mexican Americans.<sup>19</sup> Multiple factors may account for this association, including low socioeconomic status, lack of family and social support, and sense of isolation; many of these factors are more common in some ethnic groups, particularly those that have immigrated to the United States.<sup>19</sup> In addition, ethnicity is related to poor glycemic control, which is related to worse clinical outcomes.<sup>20</sup> Worse clinical outcomes would in turn perpetuate and exacerbate depression.<sup>21</sup>

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The presence of depression also influences adherence to any DM treatment plan.<sup>21</sup> Some immigrants to the United States may be more likely to develop stress and depression because of the need to live in, and adapt to, a completely different social and cultural environment. A recent study showed that Puerto Rican elders in Massachusetts were significantly more likely to have physical disability, depression, cognitive impairment, DM, and other chronic health conditions than non-Hispanic white elders living in the same neighborhoods.<sup>22</sup>

Depression is one of the most frequently missed diagnoses in clinical practice.<sup>23</sup> Health care providers should become familiar with various ways of assessing the presence of depression in their patients. Although specific scales are useful in assessing depression in specific cultural groups, some general approaches may also be useful in regular clinical encounters. For instance, specific questions such as "Have you felt depressed or sad much of the time this past

year?" may provide insight into whether a patient may be depressed.<sup>24</sup>

Cross-cultural studies have shown some particular differences regarding depression in some racial/ethnic groups. For instance, Hispanic patients may interpret symptoms of depression more benignly, are more likely to use prayer and other nonmedical therapies, and are less likely to receive treatment in the mental health specialty setting than non-Hispanic white patients.<sup>24</sup> The assessment of emotional distress in patients with DM has also become an important part of regular DM care. Some new approaches have emerged about how to evaluate this in the general population with DM.<sup>25</sup> There is a growing need to routinely assess emotional distress in patients with DM, taking into consideration their cultural background.

### Educational Level

It is still unclear how educational level influences the development and/or progression of type 2 DM. Some interesting data show that a higher educational level may be associated with better DM-related outcomes.<sup>26</sup> For instance, the association of educational level with either type 2 DM or CVD was examined in a sample of second-generation Japanese American men living in King County, Washington. Men with a grade-school education showed higher frequencies of both diseases compared with men with any college education or high school diplomas. The association of educational level with risk of type 2 DM was not explained by other factors, such as occupation, income, diet, physical activity, weight, insulin, lipids, and lipoproteins, whereas the association with CVD was explained in part by the larger average body mass index (BMI), higher total and very-low-density lipoprotein, triglycerides, and lower high-density lipoprotein (HDL) and HDL<sub>2</sub> cholesterol observed in men with technical school educations compared with the other men.<sup>26</sup> Therefore, a low educational level may not be the direct cause of worse outcomes in patients with type 2 DM, but rather a "marker" of multiple socioeconomic and cultural factors that may influence adherence to treatment and the course of the disease.

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Consistent with this association, another study showed a strong correlation between lower socioeconomic and educational level and being overweight or obese.<sup>27</sup> However, a recently published study found no consistent responses to lifestyle modification intervention according to educational background in obese patients with type 2 DM.<sup>28</sup> Despite the lack of consistent data, it is recommended that health care providers take into consideration patients' educational level

when implementing any educational activity, whether in a regular clinical encounter or through a group DM educational program, since it may lead to the identification of other important social and cultural factors that may influence DM care.

### Fears

Patients can have multiple fears that may influence their adherence to a DM treatment plan. Many patients fear the presence of type 2 DM and its complications. This fear, expressed by a sense of hopelessness, may be due to lack of adequate information about the disease. Conversely, in some patients, a sense of fear may lead to a more responsible attitude toward the disease and may improve self-management behavior.<sup>29</sup>

Another common fear in patients with type 2 DM, particularly in some ethnic groups, is related to the consequences of insulin use. This medication is considered by many as a treatment of last resort that equals the development of severe DM-related complications, such as going blind and ultimately dying of the disease. It is perceived as basically a death sentence and decreases patients' likelihood of following a good treatment plan.<sup>30</sup>

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Our own experience in the Latino Diabetes Initiative at the Joslin Diabetes Center confirms that this fear is common among Latinos. For instance, 91% of Latino patients who were seen for the first time in our program were not familiar with the term *hemoglobin A1C* and were not aware of the importance of tight glycemic control. In addition, 43% thought that insulin causes blindness and 25% were not sure whether this statement was true or false.<sup>31</sup> Because 90% of the patients included in this survey had health insurance coverage and a higher-than-average educational level compared with the general population, it would be expected that such barriers to insulin therapy would be more pronounced in other Latino subgroups.<sup>31</sup>

The basic implication of fear regarding DM care is quite obvious. Before prescribing medicine, health care providers should openly ask patients if they have any particular fears about taking insulin or any other DM medication. As an anecdotal experience, a few years ago I saw a patient who, according to notes by his primary care physician, had been taking insulin for several years. When referred to us for uncontrolled DM, one of my first questions to him was: "Are you taking your insulin injections?" He openly said to me: "Claro que no, doctor!" (Of course not, doctor!) "No quiero quedarme ciego por usar la insulina!" (I don't want to get blind from taking insulin!) Unfortunately, and as happens

frequently with many patients, he had already developed severe complications. Both his legs were amputated within 1 year, and he died of a cardiovascular event within 2 years. A very simple question before starting a patient on insulin can be the first step to overcoming this common fear of insulin.

### General Family Integration and Support

Although family is important for virtually all human beings, the level of closeness and dependence between family members may differ in various populations. In general, some groups (eg, Latinos) often exhibit a collective loyalty—often referred to as *familismo*—to the extended family or group that supersedes the needs of the individual. The benefit of this loyalty is that more members in any given family may provide support to Latino patients. At the same time, it may be more difficult for some patients to make their own independent decisions. It is not unusual to see some patients who have to discuss decisions on their DM treatment, such as a new meal plan or the use of certain medications, with several members in the family before making a decision.<sup>3,32,33</sup>

Health care providers should recognize the importance of this particular value for some groups. Rather than seeing it as a cultural barrier, this close relationship to many family members brings a unique opportunity to address some important aspects of DM care and prevention that may be applicable to the extended family.<sup>33</sup> Some research suggests that structural togetherness in families is positively related to DM quality of life and satisfaction among patients with this disease.<sup>34</sup>

### Health Literacy

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand the basic health information and services they need to make appropriate health decisions. Knowing a language is not a guarantee of high health literacy, although it certainly plays a role.

Limited health literacy, common in patients with both type 1 and type 2 DM, has been associated with worse DM outcomes.<sup>35</sup> A particular association that may influence the development of specific DM outcomes is that of health literacy with DM self-management behaviors, as assessed in a population of patients with type 2 DM.<sup>36</sup> Self-management behaviors can be improved in people with low as well as high health literacy.<sup>37</sup> Furthermore, a recent study found that self-efficacy was associated with self-management behaviors across Asian/Pacific Islanders, blacks, Latinos, and white Americans with various degrees of health literacy.<sup>38</sup>

A particular association that may influence the development of specific DM outcomes is that of health literacy with DM self-management behaviors, as assessed in a population of patients with type 2 DM.

Ideally, specific patient educational programs and materials regarding low health literacy should be developed for each racial and ethnic group.<sup>39</sup> Health care providers should evaluate their patients' health literacy levels when implementing a DM educational program or even when providing regular patient educational materials. There are various ways to evaluate health literacy. A common instrument used for this purpose is the test of functional literacy in adults.<sup>40</sup> The reader may want to become familiar with this instrument as a starting point to formally evaluate patients' health literacy.

### **Individual and Social Interaction**

Every individual has a unique character and personality and different approaches to interacting with other people. There is no right or wrong way for how various cultures approach this issue. Each group may just be different. For instance, many Latino patients expect to develop a warm and personal relationship with their physicians. This type of patient-physician relationship would be characterized by interactions that occur at close distances and emphasize physical contact, such as handshakes, a hand on the shoulder, and even hugging under certain circumstances.<sup>3,41</sup> Some Latino patients with DM may erroneously think that their health care provider does not care about them if they do not experience this type of interaction. Even though health care providers cannot switch behaviors as they interact with patients with diverse backgrounds and cultures, keeping in mind that certain groups prefer particular approaches may facilitate clinical encounters and help establish a more trusting and effective relationship with patients.

### **Judgment and Beliefs About the Disease**

Every social group shares beliefs about health and illness. Groups and individuals may have a particular explanatory model of illness. Knowledge and understanding of these health beliefs and explanatory models are essential for effective clinical encounters and educational programs. Some beliefs related to the development of DM include heredity, eating sweets, stress, emotional instability, and, sometimes, even an acute episode of fear or anxiety.

A recent study explored some health-related beliefs and experiences of black, Hispanic/Latino, American Indian, and Hmong people with DM.<sup>42</sup> The investigators found that many participants attributed their loss of health to the modern American lifestyle, lack of confidence in the medical system, and the general lack of spirituality in everyday life. Interestingly, participants recommended improvements in the areas of health care, DM education, social support, and community action that emphasized respectful and knowledgeable health care providers, culturally responsive DM education for patients and their families, and broad-based community action as ways to improve DM care and educational programs.<sup>42</sup>

Health care providers should explore beliefs about the development and course of DM with their patients. A simple question to start with is: "Why do you think that you devel-

oped DM?" This initial evaluation may guide the clinician on what important factors to address with that patient. For instance, if the patient responds that DM is clearly the result of stress or anxiety, a formal plan to refer the patient to individual and/or group education to tackle these factors should be implemented. If the answer is related more to lifestyle issues, such as inadequate meal planning and/or lack of physical activity, this disclosure can be used to motivate the patient to engage in activities or programs that help with lifestyle modification.

### **Knowledge About the Disease**

Patients' knowledge of DM is usually associated with self-management behaviors but not necessarily or directly associated with DM-related outcomes.<sup>36</sup> However, because improving self-management behaviors is likely to lead to better DM control and, hence, a lower risk of DM complications, general knowledge of DM will continue to be an important aspect of DM educational programs.

Regarding self-management behaviors in some racial/ethnic groups, data from the 2001 Behavioral Risk Factor Surveillance System (BRFSS) showed that certain DM management factors significantly varied across study groups.<sup>43</sup> Some of these differences persisted after adjusting for current age, age at diagnosis, sex, marital status, income, and education. For instance, analyses revealed that Hispanics, compared with white Americans, were more likely to take oral agents to control their blood glucose (BG) level but less likely to monitor their BG level daily and to check their feet for sores or irritation.<sup>43</sup> Whether these differences are related to less knowledge of DM is not known; however, it appears clear that culturally oriented programs should focus on improving patients' knowledge of DM. This can specifically help them improve those self-care management behaviors, which may be more problematic in certain population groups. Specific culturally oriented programs to improve self-management behaviors are necessary.<sup>3,31,44</sup>

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### **Language**

The most obvious "cultural" barrier in a clinical and educational encounter is the inability to communicate in the same language. It may limit the patient's ability to ask questions, to verbalize important information and concerns, and to establish a natural and spontaneous relationship with the health care provider. Language has been shown to affect clinical outcomes and may be a serious barrier to effective patient care.<sup>45</sup>

In general, patients prefer health care providers who have a similar ethnic background. It may improve compliance and

follow-up.<sup>45</sup> However, there is currently a pronounced discrepancy between the number of physicians who can communicate in both English and an additional language and the number of non-English-speaking patients. For instance, in 1999, Latino physicians accounted for ~3.3% of practicing physicians in the United States; however, 13.9% of the patient population is of Latino origin.<sup>46</sup>

Although efforts to increase the number of health care providers from diverse cultural backgrounds should be reinforced, the reality is that most non-English-speaking patients will continue to be seen by professionals who speak only English for a long time. Therefore, the proper use of interpreters is essential. A word of caution is necessary concerning the common circumstance in which a family member acts as an interpreter during routine clinical encounters. The advantage to this scenario is that the family member may be able to provide additional helpful information to the health care provider. The disadvantage is that the family member may not be objective about translating all information, may not put aside his or her emotional attachment to the patient, and may communicate only what he or she considers important.

Health care providers should find the best translating option(s) for their patients. Although speaking the same language facilitates the clinician-patient interaction, other elements (eg, trust, genuine interest, honesty) have no language barriers.

### **Myths**

Myths, which are generally not explicit and are usually interwoven with values and beliefs, are common in patients with DM. Such myths include those related to why DM has occurred or why it has taken a specific course. In some groups, a clear link with faith and religion is present. There are many possible myths—that DM occurs from eating a lot of sweets, is the result of destiny, is caused by lack of faith, or is punishment for a particular action. Certain myths and fears have developed in relation to insulin use.<sup>47</sup> Health care providers should ask patients about possible myths and be respectful of patients' answers. Understanding what myths patients believe can help clinicians develop specific strategies to dispel them.

### **Nutritional Preferences**

Humans are biologically adapted to their ancestral food environment, in which foods were dispersed and energy expenditure was required to obtain them.<sup>6</sup> The modern developed world has a surplus of very accessible, inexpensive food. Unfortunately, this food is usually rich in carbohydrates and saturated fats.<sup>6</sup> Minority populations in the United States have a high risk of developing type 2 DM, partly due to a strong genetic predisposition.<sup>8</sup> Because more people are incorporating unhealthy foods in their regular meals, eating larger portions, and not engaging in regular physical activity, rates of obesity, type 2 DM, and CVD are rising.<sup>8</sup>

Although similarities between racial and ethnic groups exist, different groups have different food and nutritional

preferences. In fact, foods may be so diverse that considerable discrepancies may exist in subgroups in each general racial/ethnic group, such as in Asians (ie, Japanese, Chinese, Korean, Hawaiian) or Hispanics/Latinos (ie, Caribbean, Mexican American, Central American, South American). Food preferences even vary by country or region in each of these subgroups. For instance, food preferences in Venezuela may differ from those in Colombia, and those in the Dominican Republic may differ from those in Puerto Rico.<sup>3</sup>

Food is usually at the core of family and social interaction. In fact, affection is often manifested through the gift of food, and socialization revolves around copious eating. Extensive education is required to address healthy eating as a sound choice for any family or social event. An additional challenge resides in the fact that a common pattern of meals is served at any given home. When one family member has been encouraged to modify his or her meal plan, the whole family may be affected, particularly if it is the cook who has type 2 DM. Our experience at the Joslin Diabetes Center is consistent with this scenario. Some Latino women have a hard time modifying their meal plans because they usually cook at home, and what they make is what the entire family eats. Generally, not everyone in the family welcomes a change in meal patterns.

Clinicians must identify local educational resources to help their patients receive culturally oriented medical nutritional therapy. Bicultural dietitians are an excellent resource for physicians. In addition, patient educational materials in this important area of nutrition may be identified through national organizations such as the American Diabetes Association, the National Institutes of Health, and the National Diabetes Education Program. Some specific programs, such as the Latino Diabetes Initiative and the Asian American Initiative at the Joslin Diabetes Center, can also provide some helpful information.

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### **Other Types of Medicine (Alternative)**

Many patients with DM combine alternative and traditional medicine. Alternative medicine has long been part of most cultures throughout the world. The most common forms of alternative medicine are herbs, chiropractic care, yoga, relaxation, acupuncture, ayurveda, biofeedback, chelation, energy healing, Reiki therapy, hypnosis, massage, naturopathy, and homeopathy. A recent report showed that of 2472 adults with DM included in the study, 48% used some form of alternative medicine.<sup>48</sup> Interestingly, this study found that the use of alternative medicine was associated with the increased likelihood of receiving preventive care services and increased emergency department and primary care visits. This association does not necessarily represent causality. In other words, alternative medicine use may represent a factor that leads to more proactive health care

behavior and use of conventional medical services in adults with DM; conversely, high use of conventional medical services may lead to increased use of alternative medicine.

Whatever the true directionality of this association, alternative medicine use is common and appears to be even more frequent in certain minority groups.<sup>49</sup> It is estimated that one third of patients with DM use some type of dietary supplement.<sup>49</sup> Dietary supplements have active pharmacologic ingredients that may cause not only their theorized mechanisms in lowering BG levels but adverse effects and drug interactions as well. Both clinicians and patients should be aware of alternative medicines currently being used in DM care and their adverse effects and monitoring parameters.<sup>50</sup>

**B**oth clinicians and patients should be aware of alternative medicines currently being used in DM care and their adverse effects and monitoring parameters.

Few studies have been conducted to evaluate the effect of all different modalities of alternative medicine on DM control and DM-related outcomes. However, more research is being conducted in this area, and some studies have shown encouraging results. For instance, a recent study found that yoga may have a short-term positive influence on BG and lipid levels in some patients with DM.<sup>51</sup> Obviously, more research on alternative medicine use in patients with DM is needed. Health care providers should not forget to ask patients if they are using any form of alternative medicine. This question should be asked in a sensitive and respectful manner so that patients do not feel threatened or embarrassed.

### Physical Activity

Physical inactivity is associated with increased risk for obesity, type 2 DM, and CVD, among other conditions. Data in all 50 states and the District of Columbia from the BRFSS for 1994 through 2004 showed that overall, the prevalence of leisure-time physical inactivity declined significantly ( $P < 0.001$ ) from 29.8% in 1994 to 23.7% in 2004.<sup>52</sup> Leisure-time physical inactivity was defined as a “no” response to the survey question, “During the past month, other than your regular job, did you participate in any physical activities or exercise, such as running, calisthenics, golf, gardening, or walking for exercise?” Therefore, physicians should remember that this question only identifies people who do not exercise at all and not all those who may exercise irregularly.

The proportion of physical inactivity among men decreased from 27.9% to 21.4% and in women from 31.5% to 25.9%.<sup>52</sup> Among racial/ethnic groups, between 1994 and 2004, prevalence of leisure-time physical inactivity was lowest among non-Hispanic white men and decreased from 26.4% to 18.4%. Among non-Hispanic black men, the prevalence of physical inactivity decreased from 34.2% in 1994 to 27.0% in 2004. Among Hispanic men, the prevalence of leisure-time inactivity decreased from 37.5% in 1994 to 32.5%

in 2004. The proportion of physical inactivity decreased from 45.7% to 33.9% in non-Hispanic black women, from 44.8% to 39.6% in Hispanic women, and from 28.3% to 21.6% in non-Hispanic white women. Asians/Pacific Islanders, American Indians/Alaska natives, and other multiracial groups did not have sufficient sample sizes to assess trends.

All these data demonstrate that the nationwide prevalence of leisure-time physical inactivity for adults in the United States has declined an average of 0.6% per year during an 11-year period. However, a substantial number of people continue to have no engagement in regular exercise, in particular a vigorous type of physical activity that may contribute to reducing the risk of developing type 2 DM and to controlling the disease. Additional data show that >30% of older adults aged  $\geq 70$  years are inactive. Physical activity preferences may vary among racial and ethnic groups. For instance, older white Americans may prefer jogging or going to the gym; older Latinos may prefer activities such as walking or dancing.<sup>53</sup> When prescribing an exercise program for a patient, physicians and patients should discuss preferred physical activities to enhance a higher chance of continuity.<sup>54</sup>

Further research is needed to identify attitudes toward, and barriers to, physical activity in specific ethnic and racial groups. This type of research may help the development of community culturally oriented programs that, in combination with the availability of accessible facilities and transportation options, may motivate people from certain racial/ethnic populations to engage in regular physical activity.

### Quality of Life

Type 2 DM has significant adverse effects on health-related quality of life. Various measures of quality of life have been assessed in people with DM. Several studies have demonstrated significant reductions in health status compared with other chronic disease populations and healthy controls.<sup>55</sup> DM has been commonly associated with disadvantageous scores on specific measures of quality of life, such as frequent symptoms, worries, self-care, locus of control, functional ability, social support, and sexual functioning and depression. Many of these associations are influenced by multiple patient and disease factors, particularly age, sex, and the presence and severity of disease complications and comorbid conditions.<sup>55</sup> The effect of DM on reducing health-related quality of life has also been evaluated and confirmed in multiethnic populations.<sup>56</sup> Some factors, such as family structure and support, may improve quality of life in patients with DM, as shown in a study of blacks.<sup>34</sup>

Although a patient's quality of life is difficult to routinely assess in clinical practice, health care providers should try to explore how DM and its complications have affected this factor. Quality of life clearly influences patients' behavior, receptiveness to treatment, and adherence to a treatment plan.

### Religion and Faith

Religion and faith influence daily life. Religious traditions are expressions of faith in—and reverence for—specific con-

ceptions of ultimate reality. They express one's place in, and relation to, this reality. Ultimate reality may be known as God, Allah, Atman, or Nirvana or by many other names, and it is understood and experienced differently by each religious tradition. The forms of faith and reverence of a tradition may be expressed and experienced through sacred stories; sacred symbols and objects; sacred music, art, and dance; devotion; meditation; rituals; sacred laws; philosophy; ethics; calls to social transformation; relationship with spirits; and healing.<sup>57</sup>

Some of these expressions may affect the health care arena. In DM care, a clear example of one important influence is the fasting during the daylight hours that Muslims practice during 1 month each year. This practice requires the health care provider to show cultural sensitivity and understanding by adjusting any treatment strategies during this time.<sup>58</sup>

For a health care provider to address the topic of religion and faith, 2 sets of skills are indispensable. The first involves cultivating self-awareness and reflecting on the components of one's own identity. The second involves learning strategies for talking with patients about this topic and for responding to what patients say.

### **Socioeconomic Status**

Poverty influences not only the development of type 2 DM but complications of DM as well.<sup>59-61</sup> A recent study found that family poverty accounts for differences in diabetic amputation rates of blacks, Hispanic Americans, and other persons aged  $\geq 50$  years.<sup>60</sup> Place of birth and time in the United States are factors closely related to socioeconomic status, and these 2 factors may have a direct effect on specific diseases.

For instance, The Multi-Ethnic Study of Atherosclerosis,<sup>61</sup> a population-based study of coronary calcification assessed using computed tomography scans in a large number of non-Hispanic white Americans, non-Hispanic blacks, Hispanics, and Chinese residing in the United States, found that not being born in the United States was associated with a lower prevalence of calcification in blacks and Hispanics after adjustment for age, sex, income, and education. Time in the United States was positively associated with prevalence of calcification in non-US-born Chinese and non-US-born blacks. Low education was associated with a higher prevalence of calcification in white

Americans but a lower prevalence of calcification in Hispanics. US birth and time in the United States were also positively associated with the extent of calcification in persons with detectable calcium.

These differences did not appear to be accounted for by smoking, BMI, low-density lipoprotein and HDL cholesterol, hypertension, or DM.<sup>61</sup> Therefore, multiple socioeconomic and acculturation factors in various racial and ethnic groups are apparently related to the development and progression of various metabolic and vascular conditions. From a practical perspective, health care providers should always consider their patients' socioeconomic status when assessing the presence of various disease processes and when implementing any treatment plan.

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### **DISCUSSION AND CONCLUSIONS**

Multicultural societies exist throughout the world. Many clinicians routinely provide health care to people from different racial/ethnic and cultural groups. Some of these groups have a particularly high risk of developing certain diseases, including type 2 DM. Providing high-quality care to any group of patients with DM continues to be a challenge in the United States, as it is in most areas in the world. Because multiple medical, social, and cultural factors influence the development and progression of type 2 DM, management of patients becomes even more challenging if health care providers cannot identify and address the many contributing factors.

The standards of DM care apply to every individual with this disease and should continue to be the core of every clinician's practice. However, improving health care providers' cultural competence may help improve the quality of care provided to minority groups and may ultimately reduce health care disparities. Increased cultural competence may also improve patient-provider trust and communication, as well as help patients adhere to prevention and treatment plans.

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