

# Theory is the Cart, Vision is the Horse: Reflections on Research in Diabetes Patient Education

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## PURPOSE

*In this paper, we examine the nature of vision and the role it plays in helping educators identify and use theories productively. We also discuss the role of theory in diabetes education and provide criteria for selecting appropriate theories.*

## METHODS

*The vision of diabetes education developed at the Michigan Diabetes Research and Training Center was used to illustrate how our vision has influenced our use of educational and behavioral theories.*

## RESULTS

*Both our vision and our theoretical assumptions should be articulated, discussed, debated, and studied.*

## CONCLUSIONS

*Diabetes patient education research can systematically contribute to the development of a sound, coherent, and progressive body of knowledge that will truly serve diabetes patient education.*

The good news is that virtually all diabetes education research and practice are based on theory. The bad news is that most of the time the theory guiding a particular program or research study is implicit (ie, has to be inferred) rather than explicit. The consequence of not making our theoretical assumptions explicit is that diabetes education research appears to lurch in one direction and then another rather than evolve into a coherent, sound, and progressive body of knowledge. Theory can play an important role in diabetes education if it is used appropriately. However, to be of real value the educator's or researcher's use of theory has to be guided by a vision of diabetes education based on reflective practice. Over the years, we have encountered many instances in which a particular theory and the concomitant research and educational methods associated with that theory were used without the benefit of an underlying vision. In these instances, theories and methods have not only proven to be ineffective, but have encouraged skeptics to conclude that diabetes patient education itself does not work.

#### TALES FROM THE FRONT

The following four apocryphal tales represent conversations we have had dozens of times over the past years at the Michigan Diabetes Research and Training Center (MDRTC). We believe that these tales serve to highlight some of the key issues related to the role of theory in diabetes education practice and research.

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#### Tale 1: The New Educator

MDRTC curmudgeon: (Answering phone) "Yellow."

Diabetes educator: "Hello, I'm calling because I need to evaluate my diabetes education program. I heard that you had some evaluation instruments that I might be able to use."

MDRTC curmudgeon: "Yes, we have a number of assessment instruments that could be used in program evaluation. However, it might be helpful if you could tell me what you wish to accomplish by evaluating your program."

Diabetes educator: "I want to meet the requirements for program recognition."

MDRTC curmudgeon: "I see."

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#### Tale 2: The Graduate Student

MDRTC curmudgeon: (Answering phone) "Yellow."

Graduate student: "Hello, I'm in a Master of Nursing program at Amazon University. I want to do some diabetes attitude research for my master's thesis. I was wondering if I could use the Diabetes Attitude Scale?"

MDRTC curmudgeon: "We will be glad to send you the Diabetes Attitude Scale. Just what kind of research question are you hoping to answer?"

Graduate student: "Well, I want to give the Diabetes Attitude Scale to patients before and after they go through our patient education program."

MDRTC curmudgeon: "Why have you decided to measure the impact of the program on attitudes?"

Graduate student: "Because the instructor in my Health Behavior course said that attitudes are important."

MDRTC curmudgeon: "I see."

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**Tale 3: The Recent PhD**

MDRTC curmudgeon: (Answering phone) "Yellow."

New investigator: "Hi, this is John Doe. I want to run an idea by you."

MDRTC curmudgeon: "Be my guest."

New investigator: "I want to give patients this new learning style inventory so that we can classify them into one of four categories according to the way they learn. Once we know each patient's learning style we can assign them to one of four education programs. Each is specifically designed to meet the needs of a specific type of learner. This inventory could help make diabetes patient education much more effective than it is now."

MDRTC curmudgeon: "Let me see if I understand how your research would be applied in the real world. A hospital or clinic would have to develop and provide four separate and distinct diabetes patient education programs all running simultaneously, each of which would use different learning techniques, AVs, handouts, etc. Also, the educator would need to use a distinct style of teaching for each program. Is that correct?"

New investigator: "Yes, that's it!"

MDRTC curmudgeon: "Do you think that many hospitals, clinics, and diabetes educators will be willing or able to offer four different education programs simultaneously?"

New investigator: "Well, once we publish our study showing that patients have different learning styles they ought to be willing to do it."

MDRTC curmudgeon: "I see."

**Tale 4: The Experienced Researcher**

MDRTC curmudgeon: (Answering phone) "Yellow."

Experienced investigator: "Hi, this is Jane Doe."

MDRTC curmudgeon: "Hi, Jane. How are you?"

Experienced investigator: "I'm fine! Let me tell you about the study we've just completed. I'm looking forward to presenting our results at this year's ADA annual meeting."

MDRTC curmudgeon: "Tell me about it."

Experienced investigator: "Well, we took a convenience sample of 716 patients from our clinic and asked them to complete 18 questionnaires that measured self-care, psychosocial, familial, environmental, genetic, and astrological variables. In addition, we measured their blood glucose, lipids, and blood pressure. We then analyzed the data with the new XL-6000 causal modeling program that has to be run on one of the Cray supercomputers at Princeton. We found modest correlations among all 21 variables. The relationships of all the variables can be represented by a really elegant three-dimensional hierarchical matrix model."

MDRTC curmudgeon: "Let me see if I understand this research. Your study found that pretty much every variable you measured was modestly correlated with every other variable you measured?"

Experienced investigator: "Yes, and the results can be displayed three dimensionally in 14 colors with PowerPoint™ presentation software."

MDRTC curmudgeon: "Well, that certainly sounds impressive, but I have one question. How are diabetes educators supposed to apply your research findings in the real world?"

Experienced investigator: "Well . . . um . . . uh . . . ah . . . we will tell them that all these variables play an important role in patient behavior and should be taken into account during patient education."

MDRTC curmudgeon: "I see."

**W**e have experienced slight variations of these four tales on numerous occasions. The examples illustrate the efforts of educators and researchers who have not developed a carefully thought out and elaborated vision of diabetes education, a vision that could guide the choice and application of educational and behavioral theories. In this paper, we examine the nature of both vision and theory and suggest how they can be joined to enhance diabetes education research and practice. In Part I we examine vision and discuss its purpose and function in diabetes education. We use the vision of diabetes education developed at the Michigan Diabetes Research and Training Center (MDRTC) to illustrate how our vision has influenced our use of educational and behavioral theories. In Part II we discuss the role of theory in diabetes education.

#### **PART I – VISION**

##### **All God's Children Got Vision**

*Vision* is a combination of our perceptions, values, and attitudes, as well as fundamental beliefs about the nature of human behavior. Our vision influences in important ways the theories and methods that we are likely to embrace as diabetes educators or researchers. Even if our vision is not well thought out and articulated, its influence on our behavior and perceptions can be powerful. When we describe, critically examine, and elaborate our vision by reflecting on our experience as diabetes educators and healthcare professionals, not only can we enrich and deepen that vision, we can also ensure it will guide our research and practice in a coherent, consistent fashion.

We believe that a lucid vision of the nature of diabetes self-management and the role of patients and educators in diabetes care can foster research that makes a significant contribution to the practice of diabetes education. To illustrate this issue, we will provide a brief description of how we developed our vision of diabetes education at the MDRTC. Furthermore, we will describe how that vision has guided our choice of educational and behavioral theories and methods.

##### **Our Vision of Diabetes**

During our professional training we were socialized to accept responsibility for solving problems that patients could not solve on their own. Most of us felt this responsibility deeply. It shaped virtually every interaction that we had with our patients. This deep-seated sense of responsibility to solve our patients' problems strongly influenced how we defined our effectiveness as health professionals. We usually felt effective when we were able to come up with

solutions to our patients' problems and frustrated when we could not. We felt responsible for getting our patients to maximize their level of glucose control to prevent the acute and chronic complications of diabetes. We had been taught to view patient education as a process to accomplish this underlying goal. However, approaching education as a way of persuading patients to do what someone else decided was in their best interest introduced tension and conflict into the process. Patient education was often unsatisfying for both patients and educators.

Our education team became increasingly convinced that a vision of diabetes care and education grounded in the traditional treatment of acute illnesses was poorly suited to diabetes self-management.<sup>1</sup> We believed that an effective approach to diabetes education had to be based on the fact that the responsibility for diabetes self-management rested with the patient.<sup>2</sup> Reflecting on our experience helped us see that patients with diabetes are *fully* responsible for the self-management of their illness. Furthermore, we realized that this responsibility for nonnegotiable, inescapable, and could not be shared or assigned.<sup>3</sup> We saw that the patients' responsibility for the self-management of diabetes required a fundamental redefinition of the roles and relationships of patients and educators—a new paradigm.<sup>4,5</sup> The fundamental responsibility that patients have for the self-management of diabetes rests on three characteristics of the disease.

##### ***Patients Make the Most Important Choices***

It has been our experience that the most important choices affecting the health and well-being of a person with diabetes are made by the person with the disease, not by diabetes educators or physicians. Each day the person with diabetes makes a series of choices that cumulatively have a far greater impact on their blood glucose levels, quality of life, and overall health and well-being than the decisions made by the health professionals providing their care.

##### ***Patients Are in Control***

Patients are in control of their diabetes self-management. No matter what we diabetes educators do or say, patients are in control of the important daily diabetes self-management decisions. We may plead, cajole, threaten, or advise our patients regarding any aspect of diabetes care, but when they leave the clinic or office they have control over their self-management choices. They can veto any recommendation a diabetes educator makes no matter how important or relevant the educator believes that recommendation to be.

### **Patients Face the Consequences**

The consequences of the choices patients make about their diabetes care accrue first and foremost to patients themselves. As diabetes educators, we cannot share directly in the risks or benefits of our patients' diabetes self-management choices. Diabetes educators cannot share in the risk of developing retinopathy, neuropathy, or cardiovascular disease, nor can we share in the cost to the patient's quality of life of making a commitment to rigorous blood glucose control. Diabetes belongs to the patient.

### **Our Vision of Education**

There are many situations in which the vision and interpersonal skills of the physicians and nurses involved in the patient's care matter, but they are unlikely to be as important as choosing and administering the correct medication. For example, if a patient is admitted to the hospital with a serious bacterial infection, identifying the bacteria and prescribing the correct antibiotic will usually be most important in determining the success of that patient's care.

However, in our experience, the correct medication model is not applicable to diabetes patient education where the interpersonal attributes of the educator strongly influence outcomes. This assertion is supported by studies conducted both in the fields of education<sup>6-8</sup> and psychotherapy<sup>9-13</sup> that have demonstrated that the vision and personal attributes of the teacher or counselor, such as genuineness, acceptance, emotional warmth, respect, and openness, are central to the success of educational and therapeutic endeavors. The importance of the personal attributes and vision of the educator are likely to influence the outcome of diabetes education far more than the use of any particular behavioral theory or educational method. We are the main instruments of our own work.

Over the years, diabetes educators have offered thousands of lectures designed to teach patients the definition of diabetes, explain how it is treated, describe the complications, etc. This approach to diabetes education fails to capitalize on fundamental differences between why and how professionals learn about diabetes and why patients learn about it. Most patients are not interested in diabetes as a subject; most patients are interested in their own diabetes. We have found in our work that the patient's lived experience provides an excellent focus for diabetes patient education. Even the most basic diabetes education for a newly diagnosed patient can begin with an assessment of what that patient already knows or has heard about diabetes.

### **From Vision to Theory**

Our group at MDRTC concluded that diabetes education works best as a collaborative effort among autonomous and responsible adults. Our vision led us to adopt and modify compatible theories and methods from the fields of adult education and humanistic counseling psychology for use in diabetes education. The vision of teaching, learning, and behavior change articulated by educators such as Malcolm Knowles, Carl Rogers, and Arthur Combs spoke to us and resonated with our sense of diabetes education. Their learner-centered approach to education seemed to fit diabetes education much better than the paternalistic acute care model. Adult education theory<sup>14-16</sup> posits that the teaching and learning approach best suited to adults involves using the learner's own experience and expertise, is problem based, and is relevant to challenges they are facing in their own lives. Humanistic psychology<sup>17-19</sup> is based on positive regard for the patient, encourages an egalitarian relationship between helper and client, and is guided by the recognition that patients have the innate resources to solve their problems.

## **PART II – THEORY**

### **All God's Children Got Theories**

The decisions and choices we make each day are theory driven or are based on a set of beliefs and hypotheses about what will be the likely consequences of our actions. This notion is equally true in diabetes education research and practice. We can casually infer the theoretical assumptions of a diabetes education intervention, even if those assumptions are not made explicit. For example, whether it is stated or not, almost all diabetes patient education studies are based on the theory that diabetes education is a necessary component of care and that some methods of education are more effective than others.

When reviewing an article or research proposal related to diabetes education, we can determine to what extent the educational theories are articulated and elaborated. *Articulated theory* is a theory that has been made explicit so that it can be understood by someone other than the one who is proffering the theory. *Elaborated theory* is an articulated theory that has been discussed, debated, and used in research. Of the 76 studies reviewed by a panel of diabetes educators for the AADE Educational and Behavioral Research Summit, 67 (88%) were judged to lack a theoretical framework. Although the validity of some of those judgments could be challenged, the overall findings suggest a paucity of articulated and elaborated theory in the published literature on diabetes education.

**I**t is clear that we need to encourage educators and researchers to identify and elaborate their theoretical assumptions. A critical examination of theories and their potential contribution to diabetes education will reduce the likelihood that educators will adopt the latest behavioral theory or educational trend whether or not it is truly applicable to diabetes education.

In this section we offer a definition of theory and describe its purpose and function. We also examine some of the factors that seem to influence how many diabetes educators perceive theory. Although some scientists have struggled to distinguish between conceptual frameworks, paradigms, theories, and models,<sup>20</sup> we feel that such distinctions are not necessary for this discussion. For purposes of this article, *theory* is defined as a plausible story that makes narrative or causal sense out of a series of phenomena.<sup>21</sup> In general, the usefulness of a theory is related to how well it achieves three purposes: explanation, prediction, and control.

#### **Explanation**

The first purpose of theory is explanation. Suppose we noticed that patients graduating from the diabetes education program on the east side of town got consistently higher scores on their knowledge test than patients graduating from the program on the west side of town. We might examine those programs to see if we could develop a theory about why the scores were different. If the only significant difference we could find between the two programs was that the program on the east side of town provided 60% more instructional time than the other program, we might theorize that increasing the amount of time spent on instruction resulted in a greater amount of material being learned.

#### **Prediction**

The second purpose of theory is prediction. We could improve the quality of our proposed educational theory regarding instructional time and achievement by determining whether the amount of instructional time predicted achievement in other settings. Let us assume that we had access to the needed data from a large number of diabetes programs. If we found consistent correlations in the expected direction between instructional time and educational achievement (ie, more instruction time equals higher scores), we would then have more evidence that our theory was sound.

#### **Control**

The third purpose of theory is control. Our proposed educational theory would be viewed as even more robust if we conducted experiments that demonstrated that we could produce better educational outcomes by manipulating instructional time. Control, in this instance, could be contrasted with a theory about IQ and learning that might allow us to explain and predict educational achievement but could not be manipulated to produce better outcomes.

#### **Expectations About Theory in Diabetes Education**

Many diabetes educators seem to be seeking a behavioral or educational theory that promises "If educators do A, with type B patients, under condition C, the results will always be D." We believe that the unconscious transfer of expectations about theory from the natural sciences to the behavioral sciences leads to unrealistic expectations and constant dissatisfaction. It is highly doubtful that any of us would want to live in a world where experts and authority figures could predict and control our lives through the use of sophisticated behavioral theories and techniques.

An underlying assumption of most behavioral research is that human beings are capable of making choices. Hence, the role of behavioral research is to help us understand the relationships among the settings and factors that influence our patients' choices. For example, the Health Belief Model has helped us think about health-related choices in terms of the patient's perceptions about the severity of disease, their own susceptibility to it, and the efficacy of a particular treatment, etc. If we adopt the Health Belief Model, our approach would be to explore with our patients their perceptions about their susceptibility to the complications of diabetes and their perceptions about the efficacy of rigorous blood glucose control in preventing those complications.

#### **The Role of Theory in Diabetes Education**

In both diabetes education and research, theory is a tool that can significantly enhance the ability of the person using it to achieve certain objectives. However, because it is *only* a tool, theory will always be subservient to the vision and skills of the person using it. Guided by a thoughtfully developed vision, we can choose compatible theories and methods to aid us in our work. Answers to the following three questions can help in the selection of appropriate theories.

### *Does This Theory Fit My Vision?*

The first question we can ask is "How well does this theory resonate with my vision of diabetes education?" It is unlikely that we will be able to make effective use of theory, either as educators or researchers, unless we feel an affinity for the vision imbedded in that theory. For example, when we first thought about our work with patients at the MDRTC as adult education and nondirective counseling, we said to ourselves, "Yes, these theories fit with our vision of what diabetes education can and should be." The first criterion had been met.

### *Does This Theory Explain What I Experience and Observe?*

The second criterion is to determine whether the theory helps us organize and expand our ideas and observations into a coherent pattern. Does this theory offer a plausible explanation for why things happen the way that they do? Does the theory challenge us to reflect on aspects of our practice and research that have not yet been fully developed? The fields of adult education and humanistic psychology have helped in better understanding how adults learn and grow and why they often resist being directed by health professionals. Our answers to these questions were Yes. The second criterion for choosing good theories had been met.

### *Does This Theory Provide Tools to Do the Work?*

The third criterion is utility. Does this theory help us choose or develop educational strategies and techniques? Does it help in designing educational studies? Does it enhance our ability as problem solvers? Does it guide our intervention and evaluation choices in a coherent, consistent, and fruitful way? We adopted and adapted many educational and nondirective counseling techniques from the fields of adult education and counseling psychology for our group and one-to-one patient education programs. These techniques worked well, so again our answers to the questions about utility were yes. The third criteria had been met.

### **SUMMARY**

Vision serves as a means of joining theory and practice. It provides educators with criteria to identify compatible theories and to judge their usefulness in enhancing diabetes education. Vision also enables researchers to conduct studies that are not only scientifically rigorous but whose results can be used in the real world to improve diabetes education. To put it another way, whether we are researchers or practitioners, we need a feel for our work that is grounded in experience, developed through reflection, and elaborated and tested through discussion and debate with our peers. Our vision, whether widely shared or hotly debated, can enhance our ability to engage in an ongoing, constructive, critical examination of the accomplishments and challenges in diabetes patient education. The vision experiment worksheet that we have included at the end of this article may help you explore, identify, and pursue your vision.

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**VISION EXPERIMENT WORKSHEET**

We all have vision. We all have some sense of our place in the world, and our roles and responsibilities as family members, community members, and health professionals. Our vision, made up of our experiences, values, and goals, influences in important ways how we carry out the various roles in our lives. This influence is especially true in the care of persons with diabetes, since diabetes affects the entire fabric of the patient's life. To provide effective diabetes care, we must bring all of our resources—emotional, psychological, physical, and spiritual—to bear in helping patients accommodate this illness in their lives.

Below are a set of questions designed to encourage you to think about and express your own vision of diabetes care and education. There are a variety of ways that these questions can be used to help you reflect on your role and purpose in diabetes care. You can select some of the questions and think about them on your own. After thinking about them, you can write brief answers or complete essays. Writing is an excellent way to flesh out ideas and deepen our experiences. More powerful still is sharing the answers to these questions with trusted friends and colleagues. Describing our vision to others brings it alive both in their minds and ours. Questions asked by our friends and colleagues can help us enhance and clarify our own vision.

We recommend having two or more colleagues, or an entire team or clinic staff, select a set of these questions that seem particularly relevant. Then reflect on the questions, and answer and discuss them in one or more group meetings. This process can lead to a fuller knowledge of our colleagues, enhanced relationships, and the emergence of a shared vision for a diabetes care team or education program. We have left some of the numbers blank because we believe that you will be able to add questions that are particularly relevant to your experience or your organization. We hope you find this exercise as stimulating and productive as we did.

1. What do my patients have a right to expect from me?
2. What do I have a right to expect from my patients?
3. What is my purpose as a health professional?
4. Who do I work for?
5. How do I know when I have succeeded or failed with the patient?
6. What are my goals for personal and professional growth?
7. What will I have to do to achieve my goals?
8. How is my vision expressed in my practice?
9. What are the greatest challenges facing my profession?
10. Why did I become a health professional?
- 11.
- 12.
- 13.

Appendix.