Diabetes Education: Looking Through the Kaleidoscope

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ABSTRACT

Background: Diabetes self-management education (DSME) is a critical element of care for all people with diabetes and those at risk for developing diabetes. In spite of growing evidence of the value of DSME in reducing hospitalization costs, improvement in glucose, weight and medication adherence, DSME remains an underutilized insurance benefit and access to qualified diabetes educators is problematic.

Purpose: This paper reviews the current challenges, principles and evidence of DSME, importance of integration of diabetes education with clinical care, and the future of diabetes educators and education in the emerging health care delivery models.

Data sources: Scientific literature review, Pub Med, EBP websites and other online literature databases and resources.

Limitations: This is not a systematic literature review or meta-analysis of diabetes education.

Conclusion: Because diabetes is a complex condition reaching pandemic proportions, which requires self-management of the chronic disease on a daily basis, the future of DSME faces challenges in the current fee for service environment. The National Standards for Diabetes self-management education and support and the American Association of Diabetes Educators Practice Guidelines offers new concepts for meeting the future demand of diabetes educators and education. (*Clin Ther*. 2013;35:734–739)

Key words: Diabetes self-management education, diabetes education, diabetes education and training, diabetes education outcomes, AADE7 self-care behaviors

DIABETES CHALLENGES

Diabetes is one of the fastest-growing noncommunicable diseases in the world and is reaching pandemic proportions, with the incidence doubling in the next twenty years, particularly in developing countries (**Slide 1**).[1] Total estimated costs of diagnosed diabetes have increased 41%, to $245 billion/ in 2012 from $174 billion in 2007.[2] The increasing incidence of diabetes and prediabetes represents a leading public health threat to clinicians, diabetes educators, and health care systems throughout the world. Patients must become experts in managing their weight, fitness, and blood sugar; take medications correctly; and know how to detect warning signs to lessen the burden of acute and chronic complications. Health care professionals face the clinical challenges of effective treatment and prevention of postprandial hyperglycemia, hypoglycemia, weight gain, worsening hemoglobin A_{1c}, and disease progression. Diabetes educators face the challenges of making complex treatment information and skills practical and meaningful to populations with inadequate health literacy and numeracy skills.[3] Also diabetes educators are challenged with identifying appropriate patient-centered educational and behavioral interventions for facilitating behavior change and engaging the patient in diabetes self-management. The health care system is challenged to support patients beyond formal training to improve and sustain clinical and health outcomes.

PRINCIPLES OF DSME/T

Diabetes self-management education and training (DSME/T) is defined as "a collaborative process through which people with or at risk for diabetes gain the knowledge and skills needed to modify behavior and successfully self-manage the disease and its related conditions."[4] The goals of education are to achieve best possible health and a better quality of life and to reduce the need for costly health care. Diabetes educators employ evidence-based standards and guidelines to ensure wide applicability of DSME/T services that addresses the educator, design, and delivery of DSME/T services and patients' values and expectations in shared decision making.

The American Association of Diabetes Educators (AADE) has put forth the position statement and standards for outcome measures of DSME/T that comple-

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Diabetes Challenges

- One of the top public health threats facing US and world
- 26 million people in US currently with diabetes
- Economic cost in US is $174 billion, 32% increase in diabetes-related costs since 2002
- Complex disease without proper management leads to serious complications
- Patients must become experts in managing their weight, fitness, blood sugar, take medications correctly and know how to detect warning signs of complications

Slide 1. Diabetes challenges.

ment the National Standards for Diabetes Education and Support (Slide 2).[5,6] An underlying assumption is that the unique outcome of DSME/T is "measurable behavior change," with the acceptance that knowledge that helps patients to better manage and/or live with their diabetes is useful; however, behavioral outcomes are relatively immediate and under patient control. The AADE7 Self-Care Behaviors provide the programmatic framework for measuring and evaluating behavioral outcomes of DSME/T interventions and programs. The AADE7 framework lists 7 essential behaviors: eating healthfully, being active, taking medications, monitoring, problem solving, healthy coping, and reducing risks that are crucial to effective diabetes self-management.[5,6] Integration of diabetes education and care are the result of measureable outcomes illustrated in the continuum of outcome phases (Slide 3). A central purpose of DSME/T is to help patients acquire knowledge and skills (immediate outcome) for developing confidence and motivation in order to perform the appropriate self-care behaviors. The goal is to assist patients to develop problem-solving and coping skills to overcome any barriers to self-care behavior (intermediate outcome). Optimal clinical outcomes are the result of healthy self-care behaviors, along with appropriate therapeutic regimens that enhance clinical status (postintermediate outcomes), reduce diabetes complications, and improve health status (long-term outcomes).[5]

Diabetes education has historically been provided in hospital-based programs, with venues moving to clinical and managed care, inpatient, private practice, community-based, worksite, and industrial settings, along with increasing use of telephonic management.[7] Historically, nurses and dietitians provided diabetes education, and even now, 70% of the education is done through those individuals. However, there are not enough nurses and dietitians available to provide diabetes education, so pharmacists, exercise physiologists, community health workers and mental health specialists are also DSME/T providers (Slide 4). With the expansion of disciplines and roles, the AADE has put forth evidence-based Guidelines and Competencies for Practice of DSME/T, which outline the roles and responsibilities of providers involved in the delivery of diabetes education and define 5 various levels of practice. Knowledge and skills requirements are defined for each level of practice through 5 major domains. The 5 domains are all important and need to work with each other to meet the needs of the ever-growing number of people with diabetes or at risk for diabetes (Slide 5). The first level includes non–health professionals who provide some health education and support in the community. The next level consists of health care professionals, including nurses, doctors, nursing assistants, dietitians, and pharmacists, who often provide medical care and support to people with diabetes but who may not have a depth of knowledge specific to diabetes. Level 3 includes health care professionals who specialize in diabetes education and have a wider body of diabetes knowledge and skills but who are not certified diabetes educators (CDEs). Level 4 consists of CDEs who have the knowledge, skills, and experience needed to pass the CDE examination and maintain certification. At the highest level are educators who have advanced knowledge and skills in diabetes education and who are capable of solving complex diabetes problems, diagnosing and prescribing education and treatment, and managing diabetes programs. Often these individuals are eligible for or have the board-certified advanced diabetes manager (BC-ADM) credential. These guidelines and competencies provide a road map for a professional career in diabetes education

"Measurable Behavior Change Is The Unique Outcome Of DSME/T"

- Knowledge that helps patients to better manage and/or live with their diabetes is useful
- Behavioral outcomes are relatively immediate and under patient control

AADE7 Self-Care Behaviors™

- Healthy eating
- Being active
- Monitoring
- Taking medications
- Problem solving
- Healthy coping
- Reducing risks

Slide 2. "Measurable behavior change is the unique outcome of DSME/T".