

PROMOTING CONTINUING EDUCATION IN DIABETES MANAGEMENT

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ABSTRACT

Diabetes knowledge among hospital nurses is sub-optimal. Studies that measured basic diabetes knowledge among nurses in a variety of clinical settings have consistently reported poor understanding of hemoglobin A1C, medication usage and side effects, and self-care diabetes management. Although diabetes is a common diagnosis among hospitalized patients, many nurses report they have never attended an update on diabetes management.

To promote advances in glycemic control within the hospital setting, the nursing staff must be better educated in the theoretical framework and clinical practice guidelines for diabetes management. The methods used to promote continuing education in diabetes among staff nurses need to be cost-effective as well as flexible to accommodate work shifts and learning needs. Because many hospitals are facing staff shortages and increased patient acuity, staff development needs may not be a high priority. To be successful, updating diabetes knowledge must be a collaborative effort involving clinical care, research, and education. Mentoring and peer support also are useful methods for improving glycemia in the hospital setting. (*Endocr Pract.* 2006;12[Suppl 3]:68-71)

Abbreviations:

CNS = clinical nurse specialist; DBKT = Diabetes Basic Knowledge Test

INTRODUCTION

As the overall number of persons in the United States with diabetes continues to climb, the proportion of hospitalized patients with diabetes also increases, placing an ever-growing economic burden on the healthcare system. Multiple research studies support the benefits, disease-focused as well as economic, of aggressive medical management for hospitalized patients with diabetes (1-3). Lowering glucose levels to the near-normal range reduces rates of infection, length of hospital stay, and the need for follow-up nursing assistance. Implementing the recommended standards of care for hospitalized patients with diabetes requires a nursing staff educated in the rudiments of diabetes care (4).

US hospitals are facing severe fiscal restraints and a simultaneous shortage of nurses. Because economics affects nurse/patient ratios, patient acuity is increasing on nursing units. Budget cuts among mid-management nursing specialists and staff-development personnel impact the staff nurses' ability to deliver state-of-the-art care. Staff nurses are expected to provide advanced management and patient education without vital support existing in the nursing system (5).

NURSES' KNOWLEDGE OF DIABETES MANAGEMENT

Hospital-based studies to assess basic diabetes knowledge concluded that the more staff nurses perceived they knew about diabetes, the less they actually knew (6). The Diabetes Basic Knowledge Test (DBKT) was administered to university-based hospital nurses, and their mean score was 73%, which is barely passing (7). The mean DBKT score for nurses at long-term nursing facilities was 67% (8).

An analysis of the specific results of the DBKT showed that the lowest scores were in the following areas: hemoglobin A1c testing, current trends in diabetes management, and side effects of oral diabetes medications. A study by Uding et al (9) found that, of 72 nurses surveyed, 53% had not attended diabetes updates in more than 2 years, and 26.4% had never attended a continuing education program

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in diabetes management. Moreover, 54% of all respondents noted that they care for 4 or more diabetes patients per month.

A similar study, involving 136 nurses, examined the problems encountered in caring for patients with diabetes. Of this group, 28% had had no updates on diabetes management in the previous 2 to 15 years. Although the group reported that more education was needed to improve their care of diabetes patients, few nurses believed it was within their scope of practice to change treatment regimens (10).

Other studies indicate that nurses perceive “lack of time and resources” rather than “lack of knowledge” as the primary barrier to delivery of diabetes patient education. Nurses also stated they had limited confidence to take on the sole responsibility for educating the patient with diabetes (11).

Studies conducted in a variety of settings, including community care, hospital care, and subspecialty care, acknowledged the importance of a current knowledge base in diabetes care, but also noted that knowledge without application or practice did not influence or improve patient outcomes (12).

Sen (13) reported that a misunderstanding of insulin therapy was the primary problem among nurses. Once the rudiments of diabetes care became part of clinical practice, nurses needed to expand their knowledge base to include the following 4 topics:

1. Diabetes medications
 - a. Action of oral medication
 - b. Insulin therapy and its use
2. Hypoglycemia
 - a. Recognition of signs/symptoms
 - b. Treatment protocols
3. Diabetes pathophysiology
4. Self-care education
 - a. Methods for teaching diabetes skills

Most staff nurses know how to administer insulin and perform glucose monitoring with a bedside meter because these duties are part of routine nursing practice. However, the proper timing of glucose monitoring, insulin administration, and meal coordination is less well understood. Understanding the basic concepts, and applying them to clinical practice to improve patient care, must be at the core of continuing education for nurses in diabetes management.

APPROACHES TO THE PROBLEM OF EDUCATING NURSES IN DIABETES MANAGEMENT

A variety of methods have been used in continuing education for hospital staff nurses, and each has positive and negative aspects. Some of the most popular methods are described below. It is important that the selected method be acceptable to both administration and staff; without “buy

in” from both groups, the participation and subsequent outcome are jeopardized.

Didactic lecture, a traditional form for dispensing information to large groups, is familiar to most nurses. Many continuing education programs use this format. It involves identifying objectives, content areas, and teaching methods, then evaluating the audience response. These programs may exist within the hospital setting, but more often they are off-site and conducted by a sponsoring organization or association. The Michigan Nurses Association, in coordination with various state agencies, offered a standardized statewide continuing education program from March 1, 1998 to February 29, 2000. There were 378 presentations, encompassing a variety of topics, that updated diabetes management information among hospital, public health, and home-care nurses (14). Spending a day off-duty, immersed in a particular subject, and learning from experts and interacting with peers, allows participants to focus fully on the topic at hand. However, there are 2 drawbacks to this approach. First, such programs can be costly and may not be compensated (in time or money) by the hospital. Second, if the program has not been designed as part of the hospital’s continuing education agenda, the information learned might require tailoring to fit the needs of the institution.

Learning modules are a cost-effective approach to continuing education. They can be purchased or developed for a particular institution. Because the learner determines the date, time, and place to study the module, this approach is flexible and can be adapted for nurses who work evening or night shifts. The module can be unit based and include topics of particular interest in that setting. For example, diabetes care in a renal/dialysis unit may need to focus on adjustments in insulin therapy for those with reduced kidney function rather than on general overviews of insulin administration/action. Most learning modules lack an interactive component. Some institutions have addressed this drawback by forming a discussion group to review materials with learners who have completed the module. This not only offers an interactive component but also assists in evaluating learning. Before introducing learning modules for continuing education, the nursing administration must consider how each learner will be held accountable for completing the educational task (15).

Mentoring is used in many healthcare settings to educate staff nurses assuming a new role or responsibilities. In this traditional method, a nurse expert has a one-to-one learning relationship with the staff nurse. This technique has various advantages. In addition to imparting knowledge, it includes professional role modeling and application. It is a cost-effective way for healthcare institutions to create and expand expertise among selected staff nurses. The approach is interactive and can be readily adapted to the needs of specific units. For this method to be successful, a willing mentor must be available who values this form of education. Although mentoring can occur informally, a

more formalized approach also exists, whereby each party identifies and agrees to certain objectives, implementations, and evaluations; this results in greater accountability and greater likelihood of achieving desired outcomes (16,17).

When clinical experts and resources are limited, it is necessary to devise a program that allows experienced personnel to lead an education program that encourages staff to work together toward improving knowledge and patient care. One such approach is the **peer-to-peer training** program. In some hospital settings, the development of a diabetes resource nurse program has combined the elements of mentorship with didactic programming or learning modules to educate a staff member with a particular interest in diabetes care (18). This staff member then becomes the unit-based resource for other staff involved in diabetes management. The clinical nurse specialist (CNS) in diabetes acts as the coordinator of the program, with the resource nurse becoming the liaison between the staff and the CNS. In this way, the CNS shares her expertise across a larger base of selected nursing units. The resource nurse may be charged with keeping a unit library of learning materials, demonstrating new diabetes devices, and reinforcing protocols for improved clinical care. For this program to succeed, it must have an administrative champion who recognizes the value of such an endeavor and builds time blocks into the system that encourage the use and maintenance of a unit-based resource center.

Collaborative projects between hospital staff and outpatient services or schools of nursing can increase the resources available to hospital nursing units (19). Although these programs require an effort in coordination and may be time-consuming initially, they offer a fresh approach to old issues. For example, as part of a service learning experience, student nurses took on the coach/advocate role in educating patients with diabetes (20). The students worked with staff, exploring patient education content and techniques, and in the process exchanged information that helped to improve nursing practice on the unit. The School of Nursing faculty also became a resource for the staff, updating diabetes information regularly.

Unit-based nursing research enfolded education into research and practice. In selecting a research problem or in performing a research utilization study, staff become familiar with the current literature addressing the issue and, in turn, improve their knowledge. In developing a research protocol with a practical focus, nurses first gain familiarity with the problem and then select possible approaches to be tested prior to unit-wide implementation. One nursing unit examined ways to correct the long delays between obtaining glucose levels and the dosing of insulin (21). Other units have performed retrospective chart reviews to analyze performance and/or outcomes. Such research projects require a nurse researcher or leader who has the administration's support to initiate and conduct the studies and make the appropriate improvements as indicated by the findings.

CONCLUSION

Promoting continuing education in diabetes for nursing requires creativity and perseverance. In the upcoming years, as the number of hospital admissions for those with diabetes continues to grow, it will be imperative for nurses to have the necessary knowledge and expertise to act on the recommended standards of care. Many options are available for incorporating and expanding diabetes education for nurses in the hospital setting. Healthcare systems must acknowledge the need for this education, view it as a priority, and act now.

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