Using Standardized Nursing Languages: A Case Study Exemplar on Management of Diabetes Mellitus

Natalie Fischetti, RN, MS, PhD (c)

PURPOSE. This case study illustrates the characteristics of the nursing diagnosis readiness for enhanced self health management.

DATA SOURCES. Published literature, experience, and expertise of the author were utilized as data sources.

DATA SYNTHESIS. The standardized nursing languages of NANDA International, Nursing Outcomes Classification, Nursing Interventions Classification, and interventions related to the client’s management of diabetes were derived for the case study.

CONCLUSION. The use of standardized nursing languages with interventions related to the management of type 2 diabetes provided a framework for nurses to support clients with enhanced self-management to improve their outcomes.

IMPLICATIONS FOR NURSING PRACTICE. The use of standardized nursing language in the management of type 2 diabetes can improve client outcomes.

Search terms: Health-promoting behaviors, management of type 2 diabetes, readiness for enhanced self-management

Brad D. is a 47-year-old man, 1.75 m tall and weighs 122.47 kg (body mass index = 39.9), who presented to the registered nurse (RN) diabetic educator for management of hyperglycemia. Mr. D. has a post-graduate degree in engineering and works as an engineer. He has a medical history of hypertension and hypercholesterolemia. Recently, Mr. D.’s serum fasting blood glucose increased to 160 mg/dL. At that time, his calorie intake was excessive and he described himself as sedentary. The RN diabetic educator recommended that he follow the diet developed by the American Diabetics Association (ADA) and begin a daily exercise program.

After 3 months, Mr. D. had lost 9.07 kg and was exercising regularly, but his fasting blood sugar remained at 160 mg/dL and he was diagnosed with type 2 diabetes mellitus. Mr. D. was placed on metformin (Glucophage) 1,000 mg twice a day and rosiglitazone (Avandia) 2 mg twice a day. Glycosylated hemoglobin is an important indicator of diabetic control, because it provides an average of all the blood glucose readings for the last 2–3 months. This gives the healthcare provider a better understanding of a patient’s blood sugar control than blood glucose reading. Mr. D.’s glycosylated hemoglobin at 3 and 6 months was 6.4% with no further weight loss. This correlates with an average blood glucose reading of 135 mg/dL (ADA, 2008).

In order to maintain normal blood glucose readings and promote weight loss, Mr. D. followed a daily exercise regimen, but he subsequently incurred an exercise-induced knee injury. The loss of the daily exercise regimen complicated his blood glucose management and resulted in a rise in his daily morning blood glucose readings from 110 mg/dL to 140–150 mg/dL. Mr. D. went for a preoperative testing for a surgical repair of the damaged meniscus, and 6 weeks postsurgery, he returned to his exercise program.
Using Standardized Nursing Languages: A Case Study Exemplar on Management of Diabetes Mellitus

Mr. D. then responded to a media story regarding a study of patients taking rosiglitazone, which showed an increased risk of myocardial infarctions. Mr. D. spoke with his primary-care physician, who discontinued the rosiglitazone and prescribed pioglitazone (Actos) daily. After the change of medication from rosiglitazone to pioglitazone, his morning blood glucose readings rose to 160 mg/dL. and he notified his physician, who referred him to an endocrinologist. Mr. D. met with the endocrinologist who suggested that weight reduction would help control his diabetes and discussed the option of bariatric surgery. Mr. D. stated, “I am afraid of surgery,” and expressed an interest in a more conservative approach. The endocrinologist suggested exenatide (Byetta) injections. Exenatide is used for blood glucose control and has an added side effect in some patients of weight loss (Amylin Pharmaceuticals & Eli Lilly and Company, 2007). Mr. D. agreed to try this approach and stated, “I don’t know how to inject myself.” The endocrinologist referred Mr. D. back to the RN diabetic educator for further teaching, preparation, and self-injection of exenatide, and a diet to promote weight loss. He told the RN diabetic educator he wanted to learn how to self-inject because he was afraid that his rising blood sugars would be associated with complications, but the idea of daily injections frightened him.

I. Based on these data, what nursing diagnosis would you make?
II. Guide to develop critical thinking skills for selecting accurate nursing diagnoses:
   1. List as many nursing diagnoses as you would consider relevant to this case study.
   2. Decide which of these diagnoses should be ruled out based on principles of diagnosis in nursing; that is, existence of disconfirming cues and indications that interventions for the diagnosis are not warranted.
   3. Of the remaining diagnoses, which diagnosis is likely to yield a positive change in health status through the use of nursing interventions? Would Brad D. be likely to agree with the diagnosis and associated nursing interventions?
III. For the nurse’s analysis of data and use of nursing diagnosis, outcomes, and interventions, see the following explanation.
Case Study: Brad D.

Analysis of Data: Nursing Diagnosis, Outcomes, and Interventions

Brad D.’s health-promoting behaviors clearly identify the defining characteristics of readiness for enhanced self health management, which is a recent change in label from therapeutic regimen management (L. Scroggins, Diagnosis Review Committee Chairperson, personal communication, July 10, 2008). This diagnosis is defined as “a pattern of regulating and integrating into daily living a [therapeutic regimen] for treatment of illness and its sequelae that are satisfactory for meeting specific health goals.”

The nursing-sensitive patient outcomes that the nurse and Mr. D. selected to address were Knowledge: Treatment Regimen and Personal Health Status (Moorhead, Johnson, & Maas, 2004). Mr. D. and the nurse scored his current status on knowledge of the treatment regimen as 4 on the 5-point scale with a goal of 5. They scored his personal health status as 3 with a goal of 5.

To help Mr. D. promote self-management of his therapeutic regimen, the RN diabetic educator used the nursing interventions Health Education, Exercise Promotion, Nutrition Counseling, and Health Screening (Dochterman & Bulech, 2004). Through the Health Education intervention, the RN diabetic educator worked with Mr. D. to plan continued good control of his blood sugar. The RN diabetic educator evaluated his health knowledge and discussed his current lifestyle behaviors and what sources he uses to manage changes in his condition which are the ADA and a local diabetic support group. The support group provided him with information that he did not know about his diabetes and gave suggestions on how to make positive lifestyle changes. The RN diabetic educator instructed him on how to use a glucometer to check and record his blood glucose using demonstration and return demonstration. The ADA recommends that the glycosylated hemoglobin level should be less than 7% (ADA, 2008). Mr. D. was able to self manage his diabetes independently in a short period of time.

After implementation of the intervention of Exercise Promotion, Mr. D. began an exercise regimen to improve his muscle strength and increase his aerobic exercise. Research has demonstrated that an active lifestyle promotes the metabolism of blood glucose and hence lowers blood glucose levels in well-controlled diabetics (Sato, Nagasaki, Kubota, Uno, & Nakai, 2007). Controlled blood glucose also assists in reducing the risk of cardiovascular complications from diabetes (ADA, 2008).

The nurse also provided counseling and teaching to address nutrition and weight loss. The ADA diet was reviewed and ways to integrate the diet into an active lifestyle were suggested. In conjunction with nutrition counseling to attain improved control after the medication change from rosiglitazone to pioglitazone, Mr. D. worked with the RN diabetic educator and learned how to self administer exenatide. He was able to inject himself with the medication at the end of the first visit by using the demonstration and return demonstration technique. The nurse later placed a phone call to Mr. D. and he stated that he was able to prepare and self inject the medication without difficulty.

In relation to the nursing intervention of Health Screening, the nurse instructed Mr. D. regarding the rationale and purposes of health screening and self-monitoring of health status. She measured his blood pressure, height, weight, percentage of body fat, cholesterol, and blood sugar to educate him regarding health status and changes that are necessary to improve his health.

Following the implementation of these interventions, Mr. D. experienced positive outcomes. His score on Knowledge: Treatment Regimen increased to 5. Mr. D. was able to describe the selection of foods to meet his needs for nutrition and weight loss, his exercise regimen, and self-monitoring techniques for blood glucose and other symptoms. He was able
Using Standardized Nursing Languages: A Case Study Exemplar on Management of Diabetes Mellitus

to describe how he followed his diabetic diet, exercised, and worked on weight reduction. He showed that he is actively engaged in health promotion and health protection.

Along with Mr. D.’s increase in knowledge, his score on the outcome of Personal Health Status improved to 5. Mr. D. had become aware of the problem with rosiglitazone and spoke to his healthcare provider for the most current information before stopping his medication. He was able to cope well and adjust to self-management of his chronic conditions, which included keeping his appointments with healthcare professionals.

The importance of the nurse working with diabetic clients for improved compliance and improved blood glucose control as presented in this case study is demonstrated in a recent study (Kim, Kim, & Ahn, 2006). This study examined the effectiveness of using cellular phones and the Internet to monitor the daily blood glucose levels of people with diabetes and to provide recommendations based on the blood glucose readings. After a 12-week period, the study participants had a mean decrease of 1.1% in their glycosylated hemoglobin levels, as well as improved adherence to the medication regimen and practice 30 min of exercise a day and foot care.

Acknowledgment. The author would like to thank Dr. Margaret Lunney for the guidance, support, and expertise which she provided in the development of this article.

Author contact: nfischetti@si.rr.com

References


