Application of Orem’s Self-Care Deficit Theory and Standardized Nursing Languages in a Case Study of a Woman with Diabetes

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PURPOSE. This paper aims to illustrate the process of theory-based nursing practice by presenting a case study of a clinical nurse specialist’s assessment and care of a woman with type 2 diabetes.

DESIGN. Orem’s self-care deficit theory and standardized nursing language, NANDA, NIC (Nursing Interventions Classification), and NOC (Nursing Outcomes Classification), guided assessment and the identification of outcomes and interventions related to the client’s management of diabetes.

FINDINGS. Theory-based nursing care and standardized nursing language enhanced the client’s ability to self-manage the chronic illness: diabetes.

CONCLUSION. Nursing theory and standardized nursing language enhance communication among nurses and support a client’s ability to self-manage a chronic illness.

Search terms: Nursing diagnoses, nursing classifications and nursing outcomes, Orem’s self-care deficit theory, standardized nursing language, theory-based nursing practice

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Introduction

As the average lifespan is extended, more individuals are coping with chronic illnesses such as diabetes, which has reached epidemic proportions with more than 20 million people in the United States having this diagnosis (Gordois, Scuffham, Shearer, Oglesby, & Tobian, 2003). The American Diabetes Association (ADA) estimates that a million people will be diagnosed of diabetes every year (2004). Long-term complications of diabetes are costly to both the individual and the healthcare system. Over the past decade, diabetes research has focused on pharmacological approaches and lifestyle interventions to the illness (Odegard, Setter, & Iltz, 2006). Recent evidence in the forum of diabetes care revealed a need for healthcare professionals to assess and empower individuals in the self-management of this illness.

For the purposes of this case study, health assessment by nurses was defined by Fuller and Schaller-Ayers (2000) as a process of systematically collecting and analyzing data to make judgments about health and life processes of individuals, families, and communities. In addition, the assessment included the integration of theory, diagnosis, intervention, and outcomes into practice and the use of theory to make decisions related to complex practice problems (Sandstrom, 2006). The plan of care was organized by the use of standardized nursing language, nursing diagnoses (NANDA International, 2007), nursing interventions (McCloskey & Bulechek, 2003), and nursing outcomes (Johnson & Maas, 2004). This provided a framework that is adaptable to specific health situations. A case study of a client with type 2 diabetes was used to illustrate the use of Orem’s self-care deficit theory and the integration of standardized nursing language in the care of this individual. The use of this theoretical base and nursing languages elucidated the effects of...
the illness on the individual and the individual’s various needs and responses (Sandstrom). The nurse caring for the client, Stella C., is a clinical nurse specialist (CNS).

Case Study and Application of Orem’s Theory

Stella C. is an obese 49-year-old single Italian American woman who has had type 2 diabetes for 10 years. Recently, she experienced signs of diabetes complications such as pain and numbness in both her lower extremities. Stella was seen by her primary care physician and was referred to a vascular surgeon for the painful neuropathy in her lower extremities. The surgeon ruled out peripheral vascular disease and referred Stella to the CNS diabetes educator employed in the vascular surgeon’s office for diabetes self-management skills and education.

Because conceptual frameworks and models guide the plan and implementation of care in a purposeful way (Hamric, Spross, & Hanson, 2004), Orem’s self-care deficit theory provided a theoretical framework to guide assistance of a client with diabetes to meet self-management requirements (Orem, 2001). Ideally, the interpersonal relationship between a nurse and a client contributes to the alleviation of the client’s stress and that of the family, enabling the client and the family to act responsibly in matters of health (Orem). This assessment and plan of care utilized Orem’s four client-related concepts (self-care, self-care agency, therapeutic self-care demand, and self-care deficit) and two concepts that relate to nurses and their roles (nursing agency and nursing system). In addition, the linking concepts called basic conditioning factors, which include age, gender, developmental state, health state, sociocultural orientation, healthcare system elements, family system elements, patterns of living, environmental factors, and resource availability (Orem). Using Orem’s nursing theory, concepts can be integrated with middle range theories pertaining to health promotion and family systems to guide health assessment, selection of appropriate health outcomes, and carrying out nursing interventions. The use of the standardized nursing languages of NANDA, Nursing Interventions Classification (NIC), and Nursing Outcomes Classification (NOC) thus ensures compatibility of care documentation across healthcare systems.

Comprehensive functional health pattern assessment (Fuller & Schaller-Ayers, 2000), including health promotion patterns, and family systems assessment, was essential to empower Stella in the self-management of her chronic illness. Each family member’s strengths, limitations, and unresolved personal issues were evaluated (Rutledge, Donaldson, & Pravicoff, 1999). In coping with a chronic illness such as diabetes, the degree of illness, illness progression, and the expected outcomes depend on and affect the responses of the family (Lubkin & Larsen, 2006). A thorough assessment of Stella’s family assisted the CNS to collaborate with her and her family in the selection of the most accurate nursing diagnoses, and the most appropriate outcomes and interventions.

Self-Care

Orem’s concept of self-care, or the practice of activities that adults initiate to maintain health, life, and well-being, is usually initiated voluntarily (2001). Family-centered care is based on the assumptions that professionals alone cannot and do not know what is best for clients, that the family has significant influence on the therapeutic regimens of individual clients (Rutledge et al., 1999), and that placement in the family constellation affects the individuals’ ability for self-care (Orem). Self-care is Stella’s continuous contribution to her own continued existence, health, and well-being, and is a human regulatory function that involves actions performed deliberately to regulate health, functioning, and development (Orem).

Stella is a college graduate who is employed as a financial controller in a small firm located close to her home. She enjoys theater, eating out, and being with her family. Stella lives in an apartment with her 80-year-old widowed mother, Mary, who has chronic
rheumatoid arthritis, mild hypertension, and type 2 diabetes controlled with oral medication. Mary’s arthritis has limited her mobility. Stella’s father passed away 4 years ago. She has one sibling, a married brother, Mario, who has no chronic illnesses and maintains his weight within the normal range for his height.

Since Stella’s father died, she has assumed the role of head of the household. Mary is dependent on Stella for all of her activities. Although her brother is married and lives elsewhere, he tries to help with the care of their mother, but Mary puts him off, preferring to rely on Stella for all her needs. Stella maintains the house, shopping, and cleaning on the weekends. With the excess weight, however, heavy cleaning is difficult for her. Stella said to the nurse: “I am so tired all the time. I want to hire a cleaning lady once a week but my mother thinks we don’t need anyone. She was always so good to us when we were growing up. The least I can do is take care of her and make sure she is happy now.”

In order to maintain glycemic control of her type 2 diabetes, Stella should include activities such as self-monitoring of blood glucose (SMBG) and the integration of a prescribed diet, exercise, and medication regimen into daily living. To assist her to perform self-care action for a specific purpose, the nurse must first have knowledge of the action and how it is related to continued life, well-being, and health. For example, with the ADA’s National Standards for Diabetes Self-Management Education, treatment is aimed at lowering blood glucose to near-normal levels. The risks of development or progression of diabetic retinopathy, nephropathy, and neuropathy are all greatly decreased by meeting this treatment goal (2007). It is possible that these complications may even be prevented by early normalization of metabolic status (Diabetes Control and Complications Trial Research Group, 1993). The prescribed regimen for type 2 diabetes includes emphasis on medical nutrition therapy, exercise, weight loss when indicated, SMBG, use of oral glucose-lowering agents, along with attention to family history and cardiovascular risk factors (ADA, 2007).

Self-Care Agency

Self-care agency, as defined by Orem (2001), refers to the power of individuals to engage in self-care and their capability for self-care. The person who uses this power or self-care ability is the self-care agent. Self-care agency is acquired and affected by the environment. In the long term, family members may affect the client’s adherence to behavioral changes and treatment regimens and overall outcomes (Rutledge et al., 1999). There is a power component to self-care agency, which addresses the importance of knowledge, attitudes, and skills that enable the individual to engage in self-care (Orem). If Stella feels that she is powerless to control the course of her disease, has environmental factors that are negatively influencing her self-management, and has a low self-esteem, this will negatively impact on self-care agency.

Upon assessment, it was determined that Stella has an impaired self-care agency as indicated by being “exhausted” from working all day and caring for her elderly mother. She assumed the head of the household role and spends much of her time worrying over her mother’s health care, leaving little available time for thinking and caring for her own needs. She takes her medication as prescribed but has no time to think about diet management. When questioned about SMBG, she replied: “I have a monitor somewhere, but I don’t really have time to use it. I try to avoid eating foods I shouldn’t.” Management of obesity is essential in prevention of complications of type 2 diabetes (Davis, Emerenini, & Wylie-Rosett, 2006). She stated that she feels too tired to engage in an exercise program.

Therapeutic Self-Care Demands

Therapeutic self-care demands refers to those actions that Stella should perform over time to maintain
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life, health, and well-being. This has been further delineated to include universal therapeutic self-care demands (e.g., water and food), developmental self-care demands (e.g., death of a loved one), and health deviation therapeutic self-care demands, which applies to clients with chronic illnesses such as diabetes mellitus. The demand for therapeutic self-care in regard to health deficit refers to those health changes that bring about needs for action to prevent further problems or to control or overcome the effects of the existing deviations from health (Orem, 2001).

Stella is experiencing a common complication of long-term diabetes: peripheral neuropathy (Martinez & Reimer, 2005). Stella was not aware of the correlation between her maintenance of the prescribed regimen and control of her diabetes. Examination of Stella’s feet and legs revealed palpable pedal and posterior-tibial pulses. Both legs and feet were pale, and the soles flat. Peripheral neuropathy is associated with a characteristic posture of the foot, the classic claw foot, resulting in high pressure points under the metatarsal heads and decreased ability to feel pain (Martinez & Reimer). Stella may unknowingly injure her feet during normal daily activities due to this lack of sensation. The skin on Stella’s feet was intact but plantar calluses were noted bilaterally. This places Stella at higher risk for developing a diabetic foot ulcer. Despite being a protective mechanism, callus formation concentrates the stresses and can result in inflammation, hemorrhage, and breakdown of the underlying soft tissue and eventual ulcer formation. Treatment of diabetic neuropathy involves control of the diabetes (Martinez & Reimer). Individuals affected by neuropathy are often asymptomatic at first (Gordois, Scuffham, Shearer, Oglesby, & Tobian, 2003), but this condition places the individual at high risk for more serious complications. Diminished sensation in the lower extremities makes foot ulcerations a common occurrence. The ordinary act of walking may in fact be a risky endeavor for an individual with diabetic neuropathy. Unfortunately, ulceration is not the only risk. Approximately 50% of all nontraumatic lower extremity amputations in the United States occur in people with diabetes (ADA, 2004; Martinez & Reimer).

Self-Care Deficit

The concept of self-care deficit refers to the relationship between the self-care agency and the self-care demand. Stella has a partial self-care deficit. She has some capabilities for meeting her self-care demand but, as is evident in her poor glycemic control and peripheral neuropathy, she needs assistance in meeting her health deviation self-care demands. In order for nursing to be legitimate, self-care deficit must exist (Polit & Hungler, 2003).

Nursing Agency

Nursing agency, in this case study the CNS, was developed and exercised for the benefit and well-being of Stella and can be further described as activated or inactivated. An activated nursing agency yields nursing diagnoses and a plan for self-care of people with self-care deficits. Nursing agency is the expression of the purpose of nursing, which is to compensate for or to overcome known or emerging health-associated limitations of clients for self-care (Orem, 2001). The CNS diabetes educator is an expert in diabetes management and applies a broad range of nursing interventions to assist Stella engage in self-care through knowledge and empowerment of her self-care agency. Diabetes self-management is key to successful outcomes for this client. The CNS, as activated nursing agency, served as both educator and facilitator with a primary responsibility to Stella and her family.

Nursing System

When a nursing agency is activated, a nursing system is produced (Orem, 2001). A nursing system is
all of the actions and interactions of nurses and clients in nursing practice situations that meet components of the client’s therapeutic self-care demands and protects and regulates the development of the client’s self-care agency (Orem). There are three types of nursing systems: wholly compensatory, partly compensatory, and supportive educative.

Stella required a supportive educative nursing system. The CNS performed actions to support and educate Stella and her family. The CNS provided information about diabetes self-management and supported Stella psychologically, thus enhancing her self-care agency.

**Analysis of Assessment Data Using Standardized Nursing Languages**

The first step of analysis was to identify Stella’s strengths. The CNS and Stella identified the strengths of having a close relationship with her family, particularly her brother, and having a strong sense of spirituality. Stella is a Roman Catholic and stated, “I get great solace from prayer and going to church.” In the Italian American culture, there is an emphasis on extended and close family ties and support as well as strong religious practices (Leininger & McFarland, 2005). When a family member’s illness becomes chronic, families who are able to “reframe the situation” and find positive meaning tend to cope better (Rutledge et al., 1999).

Standardized nursing language names what nurses do (NANDA International, 2007). Nursing diagnosis necessitates investigation and the accumulation of data about a client’s self-care agency and therapeutic self-care demand and the relationship between them. Collaboration by Stella and the CNS on her responses to her health problems and life processes resulted in the identification of several nursing diagnoses. This process is based on knowledge of nursing diagnoses and of the role the client can fill in the management of self-care (Orem, 2001).

Stella thought that she was not as healthy as she should be and she expressed concern about her health: “My father died from complications of diabetes. My mother has diabetes. I really need to do something.” Her insufficient knowledge related to the management of diabetes was important to address, as it would have a profound effect on the other identified human responses. During the assessment, it became clear that Stella’s knowledge about her illness was more limited than at first impression. Diabetes is a self-managed illness. Nursing diagnosis: Deficient knowledge related to management of diabetes mellitus.

Stella was interested in getting her diabetes under control and losing weight. “I’m not looking to be skinny, I want to feel better, have more energy,” she said. Stella was 5 feet 6 inches and weighed 250 pounds. Stella’s interest in weight loss was a necessary condition of engagement in weight-loss behavior. Stella is Italian American and this may present a problem when adjusting her diet, as she likes to eat pasta and bread and family gatherings are centered around meals. Foods high in carbohydrate content and calories may contribute to her lack of glycemic control. Two thirds of adults in the United States are overweight and 30.5% are obese; thus, Stella is surrounded by a culture of noncompliance related to weight control (National Institutes of Health, 2003). Nursing diagnosis: Imbalanced nutrition: More than body requirements.

With the CNS, Stella determined that she had a sedentary lifestyle. She lives in an apartment building with an elevator, and rarely uses the stairs. She was not aware that her existing poor glycemic control, lack of physical activity, and obesity could be contributing to her feelings of fatigue (Porth, 2006). The CNS noted that an overly aggressive approach to exercise could exaggerate her existing clinical condition (peripheral neuropathy). Stella’s lower extremity pain could also be a barrier to action in which Stella may not increase activity in order to avoid an increase in pain. Nursing diagnosis: Pain: Chronic.

Her cultural background and beliefs influenced management of her illness. She believes that most things are not in her control but are “in God’s hands.” Stella has a potentially dysfunctional self-concept. She
has feelings of powerlessness: “This is the hand I was dealt. There really isn’t much I can do to change things.” This may interfere with Stella’s self-efficacy to incorporate SMBG into her daily routine. She will have to learn the necessary relationship between the types of food she chooses to eat and her blood sugar levels. In addition, her weight-loss success will be influenced by her diet. She has assumed her deceased father’s role as head of the household and is the primary caregiver for her elderly, chronically ill mother. The family caregiving experience is shaped by race and ethnicity as these two factors influence one’s life experiences in terms of socioeconomic status, education, marital status, living arrangements, and general lifestyle (Lubkin & Larsen, 2006). Stella is not coping well with the changes in her home and physical health. Her mother has become increasingly more dependent on her and Stella’s physical health has deteriorated and she has developed symptoms related to complications of type 2 diabetes. Adapting successfully to chronic illness includes the conviction that a meaningful quality of life is worth the struggle. Nursing diagnosis: Powerlessness.

Stella feels that things at home have not been the same since her father died. “My mother was such a dynamo. Now she waits for me to come home and bring the world to her. She doesn’t want to do anything with anyone else,” she said. When the demands of providing for a family member are perceived as exceeding available resources, caregivers experience stress. Stress often leads to feelings of burden, depression, and a sense of powerlessness (Lubkin & Larsen). Nursing diagnosis: Caregiver role strain.

Projected Health Outcomes

Outcomes describe client states that follow and are influenced by an intervention (Johnson & Maas, 2004). In structuring a nursing system, it is necessary to identify the health outcomes sought or changes required (Orem, 2001). Utilizing Orem’s theory as a guide, Stella and the CNS planned for projected health outcomes. The CNS collaborated with Stella and formulated self-care requisites (health outcomes) necessary to Stella’s well-being and health (Orem). Self-care requisites are the expressed purposes of self-care and are attained through action (Orem). A priority-projected outcome that was agreed on was “knowledge: diabetes management.” It was decided that Stella was at level 2, limited understanding about diabetes, and its control but needed to be at level 4, substantial knowledge of diabetes and its management (Johnson & Maas).

Another agreed on projected health outcome was pain control. Stella did not realize that her extremity pain was related to poor glycemic control (Apfel, 1999). “Imbalanced nutrition: more than body requirements” was linked to the health outcome “nutritional status: nutrient intake.” Guided by her primary care physician, Stella would follow a prescribed diet specifically tailored for her. This would increase the probability that Stella would be compliant with the dietary changes. A contract was made that stipulated that she would be weighed in 1 month. A short-term goal of a 5-pound weight loss was agreed on.

To address Stella’s feelings of “powerlessness,” the outcome of “health beliefs: perceived control” was evaluated as level 2, weak personal conviction that one can influence a health outcome, with the goal of achieving a level 4, strong conviction that a health outcome can be self-influenced (Johnson & Maas, 2004). Outcomes expectations affect individuals’ adherence to diabetes regimens (Chlebowy & Garvin, 2006). Stella stated that she loves her mother and felt that it was her choice to care for her in her last years, but agreed that it would also be better to have more time for herself. Stella and the CNS agreed to address the NOC outcomes of caregiver well-being, and caregiver physical health. Her levels were identified as 2, substantially compromised, at initiation of the plan of care with a goal of moving to level 4, mildly compromised, within 1 month (Johnson & Maas). Stella needed respite care for her mother and guidance in using the community resources available to her family.
in coping with the demands of caring for her elderly mother.

**Nursing Interventions**

In selecting nursing interventions for Stella, six factors were considered: desired client outcomes, characteristics of the nursing diagnosis, research base for the intervention, feasibility for doing the intervention, acceptability to the individual, and the capability of the nurse (McCloskey & Bulechek, 2003). Designing effective and efficient regulatory nursing involves selecting valid ways of assisting a client (Orem, 2001). The NIC intervention for the diagnosis “deficient knowledge: disease process” was “teaching: disease process”; “teaching: prescribed diet”; “teaching: prescribed medication”; and “teaching: procedure/treatment” (McCloskey & Bulechek). The rationale for these interventions was related to weight loss being the single most important therapeutic objective for overweight individuals with type 2 diabetes. Moderate weight loss – 10 to 20% of body weight – has been shown to lead to improved glycemic control (ADA, 1999).

The nursing diagnosis of chronic pain and NOC outcome of pain control was addressed with the nursing interventions of pain management, physician-prescribed antiinflammatory drugs, and relaxation therapy (McCloskey & Bulechek, 2003). Stella enjoyed relaxation therapy and found a self-help group through her church. The CNS recommended incorporating learned relaxation techniques into her daily routine. In addition, Stella would begin keeping a diary. This diary would not only document her finger stick results and food intake but also include expression of her feelings. Improved glycemic control will decrease her neuropathic pain.

The nursing interventions related to Stella’s weight and nutritional management were identified as nutrition management and weight reduction assistance. Careful meal planning and engaging in mild to moderate exercise three to four times per week can reduce blood glucose significantly (Dow, 2005). The nursing interventions related to Stella’s feelings of powerlessness are self-esteem enhancement and emotional support. A client’s response to loss of control depends on the meaning of the loss, individual patterns of coping, personal characteristics, and responses of others (Carpenito, 2004). The nursing interventions for Stella’s risk for caregiver role strain are caregiver support, family involvement promotion, and respite care (McCloskey & Bulechek, 2003). Pursuing personal goals during caregiving assists caregivers to be able to focus on their own interests and loves (Carpenito). Arrangements were made to have Stella’s brother, Mario, visit on a regular basis to allow her time for herself. The CNS facilitated communication between Stella and her family by arranging a meeting among family members with the CNS acting as facilitator and educator.

**Evaluation of Health Outcomes**

Several factors were considered when establishing health outcomes related to Stella’s nursing diagnoses. Successful management of her illness as a result of her increased knowledge was indicated by the following self-care actions:

1. Stella performed SMBG daily and her diary indicated an average blood sugar of 140.
2. Her food diary indicates food choices that support good glycemic control.
3. At the 1-month follow-up visit with the CNS, Stella had lost a total of 7.6 pounds, exceeding her short-term goal.
4. Stella reports that the pain in her legs is improving, a result of better glycemic control.
5. She is coping more effectively with her caregiver role by sharing some of the burden with her brother who visits weekly. Mary has agreed with Stella to hire a cleaning service once per month. Stella is planning to attend a trip to Atlantic City and to continue attending the monthly prayer group.
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Clinical nurse specialists are appropriate healthcare providers for coordinating care across a variety of settings based on their skills in education and counseling. Increasingly, healthcare providers are forming partnerships with clients in which both provider and client collect information and discuss choices. This collaborative approach is a hallmark of the CNS diabetes educator. As the number of clients with diabetes increases, the need for experts in the field increases.

The goal of management of the chronic illness diabetes is self-care. Orem’s self-care deficit theory directs the CNS diabetes educator in the guidance of a client through the process of self-management (self-care) of diabetes. The use of standardized nursing language, NANDA, NIC, and NOC, facilitates and enhances communication among nurses and assists in standardizing knowledge for nursing practice.

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