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Exploring Occupational Therapy’s Role in Diabetes: An Experiential Internship

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Abstract
One quarter of adults aged 65 years or older in the United States have diabetes (American Diabetes Association, 2016). Associated complications, including neuropathy, vision loss, and foot damage can be difficult for individuals with diabetes to manage. Additionally, self-cares, particularly medication management, are more complex for an individual with diabetes. Research supports the use of self-management education and a multidisciplinary team approach to manage diabetes and its comorbidities. In this advocacy project, an occupational therapy doctoral student intern explored occupational therapy’s role on the diabetes management team at a large medical center in Milwaukee, Wisconsin. Following a needs assessment, the student intern worked with members of the multidisciplinary team to develop necessary resources and advocate for occupational therapy’s increased role in diabetes care within this facility. Feedback from involved parties indicates that occupational therapy has a unique and valued role in diabetes management.

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EXPLORING OCCUPATIONAL THERAPY’S ROLE IN DIABETES:

AN EXPERIENTIAL INTERNSHIP

by

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Doctor of Occupational Therapy
Abstract

One quarter of adults aged 65 years or older in the United States have diabetes (American Diabetes Association, 2016). Associated complications, including neuropathy, vision loss, and foot damage can be difficult for individuals with diabetes to manage. Additionally, self-cares, particularly medication management, are more complex for an individual with diabetes. Research supports the use of self-management education and a multidisciplinary team approach to manage diabetes and its comorbidities. In this advocacy project, an occupational therapy doctoral student intern explored occupational therapy’s role on the diabetes management team at a large medical center in Milwaukee, Wisconsin. Following a needs assessment, the student intern worked with members of the multidisciplinary team to develop necessary resources and advocate for occupational therapy’s increased role in diabetes care within this facility. Feedback from involved parties indicates that occupational therapy has a unique and valued role in diabetes management.
Table of Contents

Background 6
Project Methods and Description 8
   Step One: Complete a Needs Assessment 8
      Therapist interview 8
      Review of facility resources 9
      Meeting with CDE RN 10
   Step Two: Education and Advocacy 11
   Step Three: Developing Necessary Resources 12
   Step Four: Solicit Feedback 13
References 14
Appendices 16
   Appendix A – Case Example 16
Exploring Occupational Therapy’s Role in Diabetes Management

There are two types of diabetes: type 1 and type 2. Type 1 diabetes is most often diagnosed in childhood and is characterized by a lack of insulin production leading to hypoglycemia and the need for immediate medical attention. Type 2 diabetes is characterized by insulin resistance, which often progresses to insulin insufficiency. While type 1 diabetes is not preventable, type 2 can be prevented with healthy lifestyle choices. It is estimated that between 90 and 95 percent of individuals with diabetes have type 2 (American Diabetes Association, 2016).

Type 2 diabetes is treated with lifestyle changes including diet and exercise, as well as insulin therapy. Occupational therapy practitioners are well suited to work with individuals with type 2 diabetes to modify daily routines, teach compensatory strategies, and manage common comorbidities. This article will discuss a student occupational therapy intern’s doctoral experiential project. The doctoral experiential component (DEC) provides doctoral candidates with advanced occupational therapy skills prior to graduation. Doctoral students are encouraged to choose DEC topic of personal interest that will also further the profession. The Accreditation Council for Occupational Therapy Education (ACOTE) asserts that DEC topics must fall within one of the following categories: “clinical practice skills, research, administration, leadership, program and policy development, advocacy, education, and theory development” (ACOTE, 2012, p. S3). The DEC is initiated following successful completion of all coursework and fieldwork. The DEC differs from a traditional level II fieldwork placement in that it is 16 weeks long, the student is supervised by any professional with expertise in their project area, and the student is evaluated using a personalized set of guidelines established collaboratively between the student, their community advisor, and their academic advisor. This student doctoral intern
elected to advocate for occupational therapy’s role in diabetes management at a large medical center in Milwaukee, Wisconsin. This article will provide information about the advocacy project, its implementation and outcomes, and a case example.

**Background**

The American Diabetes Association (2016) estimates that nearly one in ten Americans has diabetes. The prevalence is even higher in American seniors, with current estimates reaching 25 percent. Diabetes is the seventh leading cause of death in America with an associated cost burden of 245 billion dollars annually. With these alarming statistics, it is no surprise that diabetes is becoming a major healthcare epidemic (Tabish, 2007). While diabetes is primarily a metabolic disorder, co-morbid complications are almost universally present and include hypoglycemia, hypertension, cardiovascular disease, heart attack, stroke, low vision, blindness, kidney disease, amputations, and depression (American Diabetes Association, 2016). Druss et al. (2001), estimates 55.5 percent of individuals with diabetes are also diagnosed with mood disorders, heart disease, asthma, and/or hypertension. Diabetes and associated comorbidities greatly impact quality of life and increase both healthcare expenditures and the complexity of medical management (Druss et al., 2001).

Due to the nature of the disease and its alarming number of co-morbidities, diabetes management is complex for clients and healthcare professionals. This complexity has led many healthcare systems to adopt a multidisciplinary team approach to diabetes care. A hallmark of the multidisciplinary approach is diabetes self-management education (DSME). DSME is an evidence-based practice utilized in a variety of settings. DSME improves overall healthcare outcomes and decreases expenditures by encouraging clients to take ownership for their health (Mensing et al., 2000). DSME provides clients with the opportunity to better understand diabetes
and advocates for greater client involvement in healthcare decisions. A large body of evidence supports the use of DSME. In a meta-analysis examining the effects of educational and behavioral interventions on diabetes management, Gary, Genkinger, Peyrot, & Brancati (2003) found that patients who received DSME type interventions experienced improved glycemic control. Additionally, Steed, Cook, and Newman (2003) found that self-management interventions tend to result in greater quality of life as self-rated by patients.

The American Association of Diabetes Educators (AADE) found there are seven key behaviors involved in self-management, including “healthy eating, being active, monitoring, taking medications, problem solving, healthy coping, and reducing risks” (American Association of Diabetes Educators, n. d.). Ideally, each of these behaviors will become part of a daily routine, ultimately leading to improved diabetes management and better health outcomes. Occupational therapists are uniquely trained to address a client’s daily routine and its impact on the client’s physical and emotional health. The American Occupational Therapy Association (AOTA) asserts that occupational therapy’s role in diabetes management includes educating individuals so they are able modify their existing routines (AOTA, 2011). Further, occupational therapists assist clients in developing new roles to accommodate for the expected progression of the disease, while continuing to encourage healthy lifestyle choices (Sokol-McKay, 2011, p. 1). Occupational therapists also train clients in compensatory strategies to assist with losses that will interfere with their ability to complete activities of daily living (Sokol-McKay, 2011).

While it is has been established that occupational therapy practitioners are well equipped to facilitate improved healthcare outcomes in individuals with diabetes, there is a gap in the literature investigating the benefits of occupational therapy’s role on a multidisciplinary diabetes management team. Members of the traditional multidisciplinary team involve physicians, diabetes
nurse educators, dietitians, and mental health professionals. Until more recently, rehabilitation professionals have not been included as members of the diabetes management team. Thus, it is important to advocate for occupational therapy’s role in diabetes management as well as investigate the effects of occupational therapy’s involvement on a multidisciplinary diabetes management team.

**Project Methods and Description**

In following best practice guidelines, the medical center in which this project took place employs a multidisciplinary approach to diabetes education and management. The diabetes education program at this medical center is designed to aid clients in learning self-management techniques to increase participation in their care, connect them with resources within the medical center and their greater community, and serve as a multidisciplinary model for the complex task of diabetes management. During a student doctoral experiential project, an OT student intern advocated for expanding occupational therapy’s role within this system.

**Step One: Complete a Needs Assessment**

The initial phase of this advocacy project involved conducting a needs assessment at the medical center. The assessment drew from a variety of sources:

**Therapist interview**

Informal interview of occupational therapists within the facility revealed varying degrees of current involvement in diabetes self-management. While over 25 percent of the geriatric population is diagnosed with diabetes, most therapists stated they only occasionally addressed diabetes related concerns or diabetes self-management techniques during treatment sessions (ADA, 2016). Most therapists expressed uncertainty regarding their role in diabetes care and their scope of practice due to overlap with other health care services at the facility. For example,
one therapist inquired whether foot care should fall under occupational or physical therapy’s scope of practice. Another wondered at what point medication management transitions from the nursing realm to occupational therapy’s realm. In general, therapists were interested in expanding their presence in diabetes management so long as their role on the multidisciplinary team was well defined. Therapists expressed interest in a brief educational in-service regarding the role of occupational therapy in diabetes management and discussed that it would be helpful to hear specific case examples of occupational therapy’s contribution to the multidisciplinary team.

**Review of facility resources**

The medical center employs a full time certified diabetes educator nurse (CDE RN). The CDE RN primarily teaches DSME courses, but also completes individual counseling sessions with clients who are referred by their primary care provider and suggests referrals to other professionals as necessary.

The DCME course runs once a month, with one three-hour session each week for four weeks. Topics covered during these sessions include the basic pathophysiology of diabetes, potential complications, treatment options, blood glucose management, signs of hypo/hyperglycemia, and the benefits of physical activity and proper nutrition (Department of Veterans Affairs & Department of Defense, 2010). Primary care physicians automatically refer any client who has been newly diagnosed with diabetes to the DSME course. Participation is voluntary and the course is provided free of charge. Following the completion of this course, clients are encouraged to attend the annual diabetes update course, which is a 3-hour session that provides a overview of resources and serves as an opportunity for clients to raise questions they may have.
Meeting with the CDE RN

To begin the needs assessment, the student occupational therapy intern met with the CDE RN to explore each profession’s role on the multidisciplinary team and inquire about the potential for expanding occupational therapy’s presence. The CDE RN stated she had various self-management concerns that commonly arose that she thought occupational therapy might be able to assist with. For example, many of her clients with diabetes struggled with multiple co-morbidities, such as low vision coupled with decreased sensation and dexterity in their hands. Often, she would refer these individuals to the low vision clinic to be provided with a hand held magnifier. However, clients were unable to hold the magnifier while also adjusting the dosage on their insulin pens. This posed a problem with blood glucose monitoring and medication management, both essential aspects of day-to-day diabetes management. Further, this referral does not address the issue of decreased sensation and dexterity, both of which are appropriate conditions for occupational intervention.

The CDE RN also spoke of the challenges in providing clients with practical suggestions to implement a daily foot care regimen. The DSME course includes a module on proper foot care for individuals with diabetes, but the CDE RN found that many clients experienced physical barriers to completing their foot care routine, including difficulty reaching their feet.

In summary, the needs assessment revealed that collaborating with the occupational therapy department would provide clients with practical solutions to common self-care management barriers, supporting the overall mission of the DSME courses. The CDE RN was eager to include occupational therapy on the multidisciplinary team to address self-management techniques related to low vision, low sensation, medication management, and foot care in clients with diabetes.
Step Two: Education and Advocacy

Following the needs assessment, the occupational therapy student intern worked closely with the CDE RN to model occupational therapy’s role in diabetes self-management. As a part of the doctoral experiential internship, the CDE RN was provided with the following suggestions for ways that occupational therapy might assist in diabetes self-management:

- Demonstration of the use of various types of adaptive equipment kept onsite, including lower body care equipment, self-inspection mirrors to prevent foot ulcers, and hands-free magnifiers that could be used to magnify insulin pens.
- A detailed task analysis was provided to identify the client factors required to complete insulin pen injections.
- Various adaptations were designed to increase success for clients with low vision and poor sensation.
- Demonstration of a breakdown of a sample daily routine to encourage proper medication management.
- Suggestions for ways to incorporate simple exercise into a daily routine (i.e. parking farther away from the grocery store entrance or taking the stairs instead of the elevator).
- Review of the existing OT lifestyle management exercise groups at this medical center, including walking clubs and the open gym programs available to all clients to promote a healthy lifestyle.
- Review of various interventions to address decreased strength and dexterity that could benefit clients with these diabetes related comorbidities.

The occupational therapy student intern provided the occupational therapy department with the following information as part of the experiential internship:
• An in-service to discuss the advocacy project and provide two case examples of occupational therapy’s role on the multidisciplinary team.

• A detailed explanation of the role of each member of the team to ensure that practitioners were well connected with other resources within this medical center.

Step Three: Develop Necessary Resources

Two gaps in existing resources were identified during the collaborative meeting detailed above. The first was a lack of information about occupational therapy services in the DSME course. To correct this, a simple presentation was developed to delineate occupational therapy’s role in diabetes management for use during the DSME course. The presentation described what occupational therapy is and gave a brief overview of different ways occupational therapy intervention might assist individuals with diabetes. These roles included adaptive equipment training, hand strengthening and dexterity, and lifestyle programs available within the facility and the community. This fit naturally between the overview on dietetics and physical therapy services already included in the course.

During review of the medical center’s resources on proper foot care, it was clear that the existing handouts were not designed for individuals with physical barriers to completing foot care. Keeping in mind common comorbidities of individuals with diabetes, the occupational therapy student intern developed a trifold foot care handout for use at the facility. The handout included information about the importance of proper foot care and photos of adaptive equipment available at this medical center. Equipment featured in the handout included a sock aide, long handled shoehorn, sponge, toe-washer, lotion applicator, and inspection mirror. The pamphlet also included occupational therapy referral information should an individual have interest in the equipment.
Step Four: Solicit Feedback

While there were no formal assessment measures used in this advocacy project, informal feedback from occupational therapy practitioners, the CDE RN, and clients indicated that including occupational therapy as part of the multidisciplinary team was valuable for all parties. The CDE RN expressed her gratitude to the occupational therapy student intern for bridging the gap between occupational therapy and the rest of the multidisciplinary team. By reviewing occupational therapy’s unique contribution to diabetes management, the CDE RN was better informed regarding the resources available to clients and felt confident in referring clients to occupational therapy for improved outcomes. Occupational therapy practitioners stated they felt better prepared to treat clients with diabetes related co-morbidities and better understood the referral options available within this medical center. Clients expressed appreciation for adaptive equipment that eased their self-management routines.

Occupational therapy practitioners have the opportunity to play an important role in the multidisciplinary management of diabetes. Occupational therapists’ unique training allows for a focus on helping individuals adapt to new demands, make changes in their routines, and become self-managers of their disease to increase wellness and participation in valued occupations. It is imperative that practitioners continue to both clarify and advocate for their role on the multidisciplinary team to improve outcomes for clients and further the profession.
References


Appendix A: Case Example

Mr. H is a middle-aged male with a history of type 2 diabetes, hypertension, alcoholism, tobacco abuse, and depression. Mr. H has peripheral neuropathy secondary to diabetes, resulting in poor sensation in his feet. Three weeks ago, Mr. H presented to the emergency department with an ulcer on his right foot. The wound was cleaned/dressed and Mr. H was sent home with instructions to closely monitor the wound and contact his physician should it worsen. One month later, Mr. H presented the ED with complaints of worsening pain and odor from the wound. He also had a small ulcer on his left foot. Mr. H was admitted to the hospital for a course of IV antibiotics and monitoring.

During his hospitalization, Mr. H was depressed about the state of his feet and the expected length of his hospital stay. He blamed himself for not being attentive enough to his wound and expressed feelings of hopelessness about the effect diabetes had on his life. He was overwhelmed with his medication management and admitted he sometimes went days without monitoring his blood glucose level or self-administering his insulin. Mr. H was concerned about his physical recovery and worried that the ulcers on his feet could lead to the amputation of his one or both of his legs.

In addition to the traditional diabetes management team (physician, diabetes nurse educator, dietician, and psychologist) Mr. H was also followed by PT, OT, and recreation therapy during his inpatient stay. The following describes each member’s role on the multidisciplinary team.

The physician was in charge of the medical management of Mr. H’s diabetic ulcers, pain management, and adjustments to his insulin.
The diabetes nurse educator reviewed how to monitor blood sugar and complete insulin injections, as well as how to manage high or low blood sugar. She provided Mr. H with educational materials to increase carry over upon discharge.

The dietician had a consultation session with Mr. H to review basic dietary guidelines for individuals with diabetes and the importance of eating regular, balanced meals. As Mr. H’s discharge date approached, the dietician worked closely with Mr. H’s wife (who performs the majority of grocery shopping and meal preparation) to determine diabetes friendly recipes for home.

The psychologist discussed Mr. H’s feelings of anger and hopelessness to find constructive outlets for his negative emotions. Mr. H began to attend peer support groups and individual counseling sessions during his hospital stay.

Occupational therapy intervention focused on examining Mr. H’s daily routine prior to hospitalization and adapting it to increase his control over his diabetes. Mr. H was concerned about his lack of independence in his foot care routine, so he was trained in the use of long-handled adaptive equipment, including a sponge, toe washer, and lotion applicator. He also was provided with a long handled self-inspection mirror so that he could monitor his wounds independently upon discharge. Mr. H began to implement his daily foot care routine during his inpatient stay in order to ensure success upon discharge home. His occupational therapist helped him develop a simple chart to use as a visual reminder to check and record his blood sugars.

Prior to discharge, occupational therapy connected Mr. H with a weekly lifestyle exercise group to ensure he remained physically active and had a social outlet upon discharge home.

Physical therapy provided Mr. H with therapeutic exercises to increase his lower extremity strength and endurance. The physical therapist worked closely with Mr. H to ensure he had an
appropriate home exercise program for use upon discharge and provided Mr. H with specialized shoes to prevent further skin breakdown.

Recreation therapy worked with Mr. H to explore his hobbies and set goals for community reintegration upon discharge. The recreation therapist led weekly groups for inpatient clients and Mr. H attended every week. By discharge, he had identified one recreation related goal, which was to get healthy enough to start fishing by summertime.