TITLE: Adherence Elective

COURSE NO.: SOMN 724

DEPARTMENT: Pharmacy, Medicine

DURATION: Semester

DIRECTOR (faculty responsible for grading): Dr. Monica Holiday-Goodman

COORDINATOR: Dr. Monica Holiday-Goodman

FACULTY PARTICIPANTS:
Dr. Monica Holiday-Goodman, College of Pharmacy and Pharmaceutical Sciences: Pharmacy Administration, x1968

SEMESTERS AVAILABLE:
One elective that takes place during Fall semester

NUMBER OF STUDENTS:
300 maximum

LOCATION:
Lectures rooms to be announced on HSC

GENERAL DESCRIPTION:
The purpose of this elective is to introduce first year and second year medical students to the current issues of medication adherence. The aim of the proposed study is to improve the knowledge and self-efficacy (perceived ability to engage in a specific behavior) of University of Toledo health professional students in addressing patient adherence to hypertension and type II diabetes treatment regimens.

The 2008 National Health and Nutrition Examination Survey reported that 60 million American adults have blood pressures over 140/90 mmHg or are currently taking prescriptions to control their hypertension.\(^1\) The American Diabetes Association states that over 20 million American adults and children can be classified as diabetic.\(^2\) If left untreated, hypertension and diabetes can result in more severe and complicated cardiovascular disease, stroke, amputations, and even death. Thankfully, several highly effective medications and lifestyle modifications have been successful in treating these diseases. However, these interventions will only work if they are followed as prescribed. The World Health Organization defines adherence as “the extent to which a person's behavior – taking medication, following a diet, and/or executing lifestyle changes – corresponds with agreed recommendations from a health care provider.”\(^3\) Medication adherence is a major problem in the United States. It is estimated that over half of all prescriptions filled each year are taken improperly.\(^4\) Additionally, it is estimated that hospitalizations due to non-adherence costs the US economy as much as $13.35 billion every year.\(^5\) Non-adherence is even greater for patients with chronic diseases that require a prolonged therapy, such as hypertension and diabetes.\(^3\) A recent Pharmacotherapy study showed that only 74% of patients with hypertension and 66% of patients with diabetes attained an adherence rate of at least 80% during the first year of treatment.\(^6\)
Adherence is a measurable and modifiable behavior; however, as with any behavioral change, support is often required to initiate and sustain the behavior. Current literature and research supports the belief that increased communication and collaboration between the healthcare provider and patient can increase patient adherence and therefore improve the patient's clinical outcome. Health care professionals, such as pharmacists, nurses, physician assistants, and physicians, can provide the support needed if they have the knowledge and tools required to address barriers to medication adherence and methods to overcome these barriers with patients. Unfortunately, there is no single plan that can increase the adherence of every patient. Each patient is unique in regard to their socioeconomic status, cultural background, and many other factors. Therefore, the plan for both treatment and adherence for each patient has to be tailored to his or her specific lifestyle. To devise effective plans for a variety of patients, healthcare providers need to be aware of various approaches for increasing medication adherence. Health care professionals can be educated in several areas to improve their communication with patients. According to the National Adult Literacy Survey, almost half of American adults have trouble interpreting health information. Therefore, arming the healthcare providers with different ways to assess a patient’s literacy and comprehension will help the healthcare providers discuss health issues, including adherence, at a level that the patient can understand. Health care providers will also need to learn different behavior modification strategies to suggest to their patients so each patient will be better equipped to successfully self manage and improve their adherence to medications and directives from the healthcare provider.

Addressing drug adherence with patients is not the responsibility of one healthcare profession. A recently conducted randomized controlled study of adult diabetic patients showed the effectiveness of educating patients with an interdisciplinary team of a physician, nurse, nutritionist, pharmacist, exercise physiologist, and a social worker. The observed health outcome was 1.9% to 2.0% reduction of HBA1c level, significantly greater than the 1.2% decline for the group with no educational intervention. We would like to apply a similar interdisciplinary approach to improve patient medical adherence. After successfully completing the educational component of this proposed study, Health Profession students in various fields will be able to apply their new knowledge while working with patients at a local health clinic. Because hypertension and type II diabetes are among the most common and costly chronic diseases, counseling this high risk population may lead to increased patient adherence and therefore substantial improvement in the clinical outcomes of the patients of those students participating in this study.

EDUCATIONAL OBJECTIVES:
At the end of the elective the student should be able to:

1. Define and discuss what is meant by medication adherence.  
   K9, K10, K11, K12, K13, K14, S7, S8, S9, P1, P3, P5, P6, P7

2. Discuss the current rate of adherence for hypertension and type II diabetes.  
   K8, K9, K10, K11, K12, K13, K14, S11, P3

3. List and discuss factors that lead to non-adherence.  
   K9, K11, K12, K13, K14, S9, P1, P2, P3, P5, P6, P7

4. Describe what barriers are present to maintaining patient medication adherence.  
   K8, K9, K10, K11, K12, K13, K14, P1, P3, P5, P6, P7, S11

5. Describe specific problems of adherence to hypertension and type II diabetes regimens.  
   K4, K6, K7, K9, K10, K11, K12, K13, K14, K15, S2, S7, S8, S9, S10, S11, P3
6. Describe clinical manifestations and treatment of hypertension and type II diabetes.
   K3, K4, K5, K6, K7, K14, S7, S8, S9, S10, P3

7. Identify, list and discuss the circumstances in which medication adherence should be addressed.
   K9, K10, K11, K13, K14, S7, S11, P1, P2, P5

8. List and discuss the advantages for increasing medication adherence.
   K8, K9, K10, K11, K12, K13, K14, S7, S9, S11, P3, P6

9. List the recommended strategies carried out during the process.
   K8, K9, K10, K11, K12, K13, K14, K15, S2, S3, S7, S11, P1, P2, P5, P6, P7

10. Explain when, how and who can contribute to improving medication adherence and be able to apply this knowledge to increase patient medication adherence.
    K9, K10, K11, K12, K13, K14, S1, S7, P1, P2, P5, P6, P7

11. Describe and discuss the role of the collaborative efforts of the health care professionals and health care professional students in improving medication adherence and be able to work within inter-professional groups to accomplish this.
    K9, K10, K11, K12, K13, K14, S1, S11, P1, P2, P3, P5, P6, P7

METHODS OF TEACHING:
   Readings:
     Read a selected list of selected references and websites.

     Lecture and small group discussions
       All students are required to attend the general informational lectures (4) at the beginning of the semester.

       Mandatory attendance of lectures

METHODS OF STUDENT EVALUATION:
   A pre-test and post-test will be given at the beginning and completion of the course.

   In order to complete the course, all forms of evaluation must be completed. Required are attendance of all 4 lectures, and pre and post quiz.

LINKAGE TO EDUCATIONAL PROGRAM OBJECTIVES:
   Knowledge:
     K3 Demonstrate knowledge of the various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of maladies and ways in which they operate on the body (pathogenesis).

     K4 Demonstrate knowledge of altered structure and function (pathology and pathophysicsology) of the body and its major organ systems that are seen in various disease and conditions.
K5 Demonstrate knowledge of the most frequent clinical, laboratory, radiographic, and pathologic manifestations of common diseases.

K6 Demonstrate knowledge of the pharmacologic basis for therapeutics.

K7 Apply basic science knowledge to clinical problems.

K8 Demonstrate knowledge of the use of study designs, statistical methods, and the scientific method in establishing the causation of disease and efficacy of traditional and non-traditional therapies.

K9 Demonstrate knowledge about relieving pain and ameliorating the suffering of patients.

K10 Knowledge of the principles, values, and a decisional framework that govern ethical decision making and of their application to major ethical dilemmas in medicine.

K11 Demonstrate knowledge of principles and development of human behavior.

K12 Demonstrate knowledge of the manner in which people of diverse cultures and belief systems perceive health and illness and respond to symptoms, diseases, and treatments.

K13 Demonstrate knowledge of the important non-biological determinants of poor health and of the economic, psychological, social, and cultural factors that contribute to the development and/or continuation of disease.

K14 Demonstrate knowledge of the importance of recognizing and addressing gender and cultural biases in individuals involved in the delivery of health care as well as in the process of health-care delivery.

K15 Demonstrate knowledge of various approaches to the organization, financing, and delivery of health care.

Skills:

S2 Demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities.

S3 Obtain an accurate medical history that covers all essential aspects of the history.

S7 Use knowledge of the most frequent clinical, laboratory, radiographic, and pathological manifestations to interpret the results of commonly used diagnostic procedures.

S8 Construct appropriate common diagnostic and therapeutic strategies for patients with common conditions, both acute and chronic, including medical, psychiatric, and surgical conditions, and those requiring short- and long-term rehabilitation.

S9 Identify factors that place individuals at risk for disease or injury, select
appropriate tests for detecting patients at risk for specific diseases or in the early state of disease, and determine strategies for responding appropriately.

S10 Recognize patients with immediately life-threatening conditions and to institute appropriate initial therapy.

Professional:

P1 Demonstrate ethical, responsible, reliable, and dependable behavior in all aspects of their professional lives and a commitment to patients, society, and the profession.

P2 Demonstrate honesty and integrity in all interactions with patients, patients’ families, colleagues, and others with whom students interact in their professional lives.

P3 Demonstrate the capacity to recognize and accept limitations in one’s own knowledge and clinical skills, and a commitment to continuously improve one’s knowledge and ability.

P5 Demonstrate compassionate treatment of patients and respect for their privacy and dignity.

P6 Demonstrate an awareness of the physicians’ role in providing health care for members of traditionally underserved populations and of their responsibility to provide care to patients who are unable to pay.

P7 Demonstrate knowledge of, and respect for, the roles of other health-care professionals, and of the need to collaborate with others in caring for individual patients and in promoting the health of defined populations.

ELECTIVE EVALUATION:
Ongoing feedback will be elicited from the students and faculty as the course proceeds. There will be a course evaluation survey at the end of the course.

PREREQUISITES: (if any)
No prerequisites are necessary prior to take this course.