

# Adopting Physical Activity Lifestyle in a Pharmacy Curriculum

OLUWARANTI AKIYODE\*, ALEX NGUYEN, JERONIMO AUGUSTO, KENNETH WILEY, EARL ETTIENNE

*Clinical & Administrative Pharmacy Sciences, Howard University, College of Pharmacy, NW, Washington DC 20059, USA.*

## Abstract

**Introduction:** Practitioners who adopt a lifestyle of regular exercise may be more likely to recommend physical activity as a management option for patients with diabetes. Physical activity remains a cornerstone in the management of type 2 diabetes.

**Course Description:** Pharmacy students enrolled in a diabetes module engaged in the physical activity recommendations they would make as pharmacists when managing type 2 diabetes. This extra credit modular course activity required students to conduct and record 150 minutes of physical activity weekly for one month.

**Evaluation:** Students reported that lack of time, energy, and motivation were the most common barriers to completing the activity; while lack of discipline, motivation and time were the most common hindrances to physical exercise consistency.

**Future plans:** The module will require pharmacy students to complete a baseline survey on their physical activity habits, and to devise an approach to counsel patients on adopting physical activity lifestyle changes.

**Keywords:** *experiential learning, lifestyle, pharmacy students, physical activity*

## Introduction

A major component of the non-pharmacological management of diabetes is the engagement in physical activity as a lifestyle behavior change in order to control blood glucose. Since obesity is a major comorbidity associated with type 2 diabetes, and with the advent of the Affordable Care Act in the United States of America (USA), preventative and lifestyle impact measures are being sought to address health care needs and management (Eckel *et al.*, 2011; ACA, 2010). Additionally, practitioners must now become more creative as health insurance cost pressures continue to escalate.

Physical exercise is regarded as one of the most abandoned aspects of type 2 diabetes management (Pham *et al.*, 1996). With cost pressure increases, employer groups have begun to challenge patients and employees to improve their health, remain healthy, and or pay higher premium rates. Hence, practitioners and educators should seek to introduce cost and life saving measures such as physical exercise in their first line treatment approach to diabetes management. The American Diabetes Association (ADA) guidelines for diabetes management recommend that all patients with diabetes should engage in at least 150 minutes of physical activity with moderate intensity to support the achievement of diabetes control (American Diabetes Association, 2014). By definition, moderate intensity suggests that a person's heart rate

should be elevated to within 50-70% of the individual's maximal heart rate when performing some type of physical exercise (CDC, 2011).

Over the years, the role of pharmacists has increased dramatically, making them the most accessible healthcare professionals that often serve as gatekeepers to patient wellness. They ultimately play significant roles in counseling patients in all practice settings including assisting with the management of disease states and ensuring patient medication adherence (Schlaifer & Rouse, 2010). The ever-evolving role of pharmacists demands that pharmacy students are well trained and prepared to deliver optimal care. Coupled with optimizing drug regimens, pharmacist directed care should therefore include motivating patients to be adherent to recommended lifestyle counseling. Despite the ADA's recommended goal of 150 minutes of physical activity weekly for diabetes patients, research shows that exercise habits are often inconsistent, due to various barriers to exercise (Dutton *et al.*, 2005; Korkiakangas *et al.*, 2009). In order to overcome these barriers, pharmacists need to encourage and reinforce patients to incorporate and adopt lifestyle behavior changes as a key element of their diabetes management.

As such, it would be beneficial for future pharmacists to personally experience the 150 minutes physical activity in order to truly empathize and relate with the diabetes and pre-diabetes patients regarding their physical activity

\*Correspondence: Dr. Oluwaranti Akiyode, *Clinical & Administrative Pharmacy Sciences, Howard University, College of Pharmacy, 2300 4th Street, NW, Washington, DC 20059, USA. Tel: + 1 202 8064207. Email: oakiyode@howard.edu*

experiences. In addition, by incorporating this action into their lives, they can better recognize challenges and barriers that most patients might experience (Lobelo & de Quevedo, 2014). This hands-on experiential teaching approach allows the students to experience the suggested lifestyle and behavior changes, but also monitor and evaluate the program by striving to reach specific, measurable, achievable, relevant, and time bound (SMART) goals (DuFour, 2010).

Evidence suggests that physicians who are not physically active in their personal life are not strong advocates of exercise for their patients (Lobelo *et al.*, 2009; Frank *et al.*, 2000). Practicing physician's personal actions often dictates their practice styles. The study found that physicians who were not physically active, were more likely to rely on prescribed medications as their first choice of therapeutic intervention (Lobelo *et al.*, 2009). Practicing pharmacists and or student pharmacists are not widely represented in the literature as having their counseling patterns and empathy influenced by their participation in physical activity. However, it should hold true that pharmacists like physicians may be more inclined to recommend physical exercise as a first line approach to managing diabetes, if they themselves engaged in the activity that they are prescribing for their patients. This descriptive evaluation aims to shed some insight on the possible barriers to the incorporation of moderate physical exercise into the weekly routine of the pharmacy student.

### Course Description

Third year pharmacy students at a private university in the USA were given the opportunity to earn extra credit points over a four week period if they engaged in physical activity consistent with the ADA recommendations for managing type 2 diabetes. The students were advised to exercise at least 150 minutes weekly, at moderate intensity level of 50-70% of their maximal heart rate obtained by subtracting the person's age from 220 (CDC, 2011). Additionally, students' activities required the use of a physical activity journal to document the occurrences of the exercise, type of exercise, barriers to achievement of exercise, and lessons learned from the exercise activity. Students were instructed to be honest in their documentation; 100% compliance was not the sole requirement to earn maximal extra credit. Reflection on the activity was seen as an important determinant for receiving the credit. At the end of the course, students submitted a hardcopy of their documentation and reflection journal to be graded for a maximum of ten marks. The grading of their journals was categorized into three levels: excellent journals were scored at ten; good journals were scored at 7.5; average journals were scored at five, and poor journals were not accepted. The grading was based on both the efforts to achieve the 150 minutes of moderate intensity physical activity, and the quality of their reflection narratives.

### Evaluation

All 48 students enrolled in the class participated in the experiential learning opportunity. The findings revealed that 56% (n=27) of the students participated in physical activity of 150 minutes weekly at least 75% of the time during the 4 week period (Table I). The majority of the students, 96% (n=46) engaged in physical activity of the expected intensity (50-70% of maximal heart rate) level. The most common types of physical activity undertaken by students were: walking/running, yoga, weight lifting and biking. The top 3 barriers to physical activity were lack of time, energy, and motivation (Table II). Self-reflection by the students highlighted the need for discipline, motivation and time to consistently execute physical activities.

**Table I: Total Number of Minutes per week of Exercise**

Adhere to exercise at least 150 min/ week for one month	%/N of student
75-100%	56% (n=27)
50-74%	23% (n=11)
25-49%	15% (n=7)
0-24%	6% (n=3)

**Table II: Top Barriers to Exercise**

Top Barriers	%/N of student
School work (time, study)	60% (n=29)
Tired/Lack Energy	19% (n=9)
Lack of motivation	19% (n=9)
Injury/Illness	15% (n=7)
Poor Weather	10% (n=5)

There were similarities in the barriers listed among the pharmacy students when compared to patients in the literature regarding their achievement of exercise goals. The most common barrier reported by the students was the lack of time which mirrored the reports by adults at high risk or diagnosed diabetes patients, (Dutton *et al.*, 2005; Korciakangas *et al.*, 2009). The impact time had on both patients and students is a clear indicator that programs should be designed taking "time" into consideration as a key component of any plan and/or regimen prescribed. The training of the pharmacist therefore warrants the inclusion of appropriate time management techniques as they would have to learn about these skills if they are to effectively help their patients successfully adhere to treatment guidelines.

Other exercise challenges experienced by students would also enable them as practitioners to better relate and empathize with patients as they incorporate exercise in the overall management of their diabetes. At the same time, their ability to successfully overcome these barriers would likely strengthen the pharmacy students' ability to motivate patients to engage in physical activity. A potential limitation to this innovation is that although it was optional for the pharmacy students to participate in this classroom assignment; the extra credit nature of the activity may have influenced the consistency and adoption of physical activity over the four weeks period. Other innovation limitations include: the absence of baseline physical activity practice of the students prior to the innovation; and subjective grading of the reflective journals. However, the experience may subconsciously and indirectly leave an impression with the students that would hopefully influence their future adoption of physical activity, and influence their provision of physical activity counseling to diabetes patients.

### Future Plans

The education of pharmacy students about their personal adoption of physical activity as a lifestyle change is vital to the development of future pharmacists, in that it would be effective in motivating patients' physical activity behavior change. Since there is little information on the exercise habits of pharmacy students, the next course offering would therefore require that pharmacy students complete a baseline survey on their physical activity habits. In addition, students would be tasked to devise an approach to counsel patients on the adoption of physical activity lifestyle.

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