

EXERCISE IN HISPANIC PATIENTS WITH DIABETES

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ABSTRACT

BACKGROUND – Obesity and physical inactivity are major risk factors in the development and progression of type 2 diabetes mellitus. Hispanic patients face barriers with language and culture in dealing with diabetes. At a Utah Community Health Center (CHC), patients needed a successful way to overcome these barriers in order to implement an exercise routine.

METHODS – We prepared a Spanish language exercise DVD and distributed it free of charge to 40 overweight Hispanic patients with diabetes. Patients were given the exercise DVD as a part of a nutrition and exercise program in a 6-week study. Patients were contacted by telephone after 1 to 3 weeks to determine whether they were using the DVD. After 5-8 weeks the patients returned to clinic to be re-weighed. Patients were asked how often and how long they exercised and whether they found the Spanish language exercise DVD was helpful.

RESULTS –Forty patients were evaluated. Six patients were lost to follow-up due to lost DVD, broken DVD player, or disconnected phone number. Thirty-four patients were included in the analysis. Thirteen patients showed an increase in the frequency of physical activity, 6 patients had a decrease, and 15 patients had no change in the frequency of physical activity. Fourteen patients showed an increase in the amount of time dedicated to physical activity, 2 patients showed a decrease. Eighteen patients did not change the time dedicated to physical activity and 25 patients showed a reduction in weight from baseline.

CONCLUSION – Use of a Spanish language exercise DVD in a Hispanic population moderately improves frequency of physical activity, time dedicated to physical activity, and weight control.

INTRODUCTION & BACKGROUND

Service has always played an important role in my life. I have always been taught to care for others and help them in times of need. I have often thought of service as an expression of self-less love. Education and learning has always been emphasized throughout my life. In every situation and experience there is something to be learned. Some of the greatest life lessons I have experienced have come from the humble gratitude of those I have served. During my undergraduate studies at Southern Utah University (SUU), I started my participation in the Service-Learning Scholars program. To me this made perfect sense to incorporate a teaching component to service.

Much of my time in the Service-Learning Scholars program has been dedicated to serve the Hispanic population. This is a growing population in the United States that is often underserved and misunderstood due to language and cultural barriers. While at SUU, I spent a lot of time traveling to Mexico to address temporal and basic needs of the people. In the past few years at the University of Utah College of Pharmacy, I have focused on the healthcare needs of Hispanic patients. My integrated service project was designed to overcome barriers that Hispanic patients with diabetes face while completing an exercise regimen. These barriers included not only language and cultural barriers, but also socioeconomic barriers such as lack of insurance, low-income households, dangerous neighborhoods, and lack of support groups.

REVIEW OF LITERATURE

Obesity and diabetes are growing at epidemic rates in the United States (Lopez-Quintero, Berry, & Neumark, 2009). Aside from genetics, modifiable causative factors include poor diet, sedentary lifestyle, and smoking. The standard of care for health care professionals is to educate

patients to implement proper diet and exercise regimens ("Standards of medical care in diabetes--2009," 2009). Diabetes is a chronic disease that leads to many different complications. These complications include problems with patients' kidneys, eyes, nerves, and cardiovascular systems. Diabetes educators provide in-depth counseling for patients to help manage these chronic diseases.

Minority populations such as Hispanics, African Americans, and Asians collectively are becoming the majority group of the United States (Lopez-Quintero, et al., 2009). Of these minority populations, Hispanics have a higher incidence and prevalence of diabetes compared to Caucasians. There are many contributing factors--genetic predisposition, education, low-income, language barriers, and culture (Lopez-Quintero, et al., 2009). In order for "Spanish only" patients to receive the help and education necessary from trained health care professionals, accommodations and interpreting services are needed to overcome language barriers (Lopez-Quintero, et al., 2009). Many health care professionals are making great strides to properly deliver their messages so that all populations may understand.

Lopez-Quintero et al.

This study addressed the language barrier among Hispanic patients upon receiving and understanding advice on physical activity and diet for chronic diseases (Lopez-Quintero, et al., 2009). The study evaluated 1,186 patients and compared "English-proficient" Hispanic patients to "limited English-proficient" Hispanic patients. The researchers matched the groups according to gender, age, region of residence, level of education, annual family income, and smoking status. Overall, Spanish speaking Hispanic patients were less physically active and less likely to make lifestyle modifications compared to English-speaking Hispanic patients (Lopez-Quintero, et al.,

2009). The authors found that only one third of the study population was given advice on physical activity or diet from a physician, and only one fifth of patients received advice on both.

Concepts incorporated from (Lopez-Quintero, et al., 2009)

This study addressed the language barrier related to the caring of patients with diabetes as well as other chronic disease states. Caring for Hispanic patients with diabetes is a major area of interest for me and was the focus of my integrated service project. By having lived in Honduras and having an Hispanic wife, I speak, read, and write the Spanish language and understand the Hispanic culture. In completing pharmacy school, I have developed knowledge of medications including those used for diabetes. These two skills help me overcome many barriers that Spanish-speaking Hispanic patients face in receiving adequate health care.

Concepts not able to incorporate from (Lopez-Quintero, et al., 2009)

One of the strengths of this study was that it had a relatively large study population. Having a large sample size makes the study more applicable to the general population. I was not able to produce such a sample size due to time restrictions and clinic capabilities. This study also matched patients according to different characteristics. This helps to eliminate confounding factors and allows the study to be more controlled. Since I did not have a control group in my project, I did not match my patients.

Korkiakangas et al.

This study also evaluated barriers of exercise in adults with diabetes. This was a systemic review conducted in Finland. A Medline search was performed to identify 13 studies according to their inclusion criteria. This review categorized over 80 exercise barriers to adults.

Concepts incorporated from (Korkiakangas, Alahuhta, & Laitinen, 2009)

This study addressed regular exercise routines. This was important because it shows a sustained effect. Although any exercise is better than no exercise, many patients can exercise for a day or two, but do not show improvement over time unless they implement a daily routine. My project was designed to show a sustained effect of exercise as well as an improvement in adult patients. Korkiakangas et al. also tried to identify a variety of barriers. A focus of my project was to identify and overcome many different barriers. This is important since patients have different barriers. It is important for health care professionals to treat each barrier individually.

Concepts not able to incorporate from (Korkiakangas, et al., 2009)

Although it is important to evaluate many different barriers, the authors tried to assess too many barriers. For my project I tried to select specific barriers of the Spanish-speaking Hispanic population. The external validity of the study by Korkiakangas et al. is specific to Finland. Therefore, some barriers do not relate to the project I completed, due to cultural differences.

Rustveld et al.

This study compared the compliance to medications, diet and exercise regimens in English versus Spanish-speaking Hispanic men with diabetes. The authors identified both intentional and unintentional nonadherence to self-care, and noted that education and counseling at the time of diagnosis play an important role in proper adherence.

Concepts incorporated from (Rustveld, et al., 2009)

This study evaluated an Hispanic population with diabetes and specifically compared medications, diet and exercise. These three components are the key aspects for patients to self-manage this disease state. As a pharmacist, I have been trained to educate patients on these three components. Proper adherence is stressed to slow disease state progression and prevent future

complications. As a part of my project in the enrollment process, patients were educated on proper diet and exercise.

Concepts not able to incorporate from (Rustveld, et al., 2009)

This study only compared Hispanic men. Although cultural differences and attitudes between Hispanic men and women exist, for my project I tried to include both genders for a complete analysis to be able to address the population as a whole. This study did not adequately address language barriers among Hispanics, but simply looked for a difference between the two languages. My project focused more on the barriers to overcome to be able to serve the patients more fully. This study also looked more at the patient's attitude toward diabetes and avoiding self-denial. This is something I did not include in my project; however, it would have been interesting to see the effect on adherence to an exercise regimen, namely the DVD that was created.

PROCEDURE

The ISP project was conducted at the Community Health Center Clinic under the direction of Laura Shane-McWhorter. The clinic serves a population of underserved and underinsured Hispanic patients. The project was funded by a grant from the Education Resource Development Council at the University of Utah. The project was a success under the collaboration with many individuals. The project was designed to help Hispanic patients with diabetes complete an exercise routine. An exercise DVD was developed and created in Spanish in order to overcome language, cultural, and economic barriers. The DVD contained two parts: walking in place exercises and exercises while seated. We then formatted the DVD, created a

label, and made 300 copies to distribute to patients at the clinic free of charge. Each copy of the DVD cost 68 cents to produce.

A major part of the project included the formalized study designed to follow patients' progress and adherence to the exercise DVD. In collaboration with the University of Utah's Pharmacotherapy Outcomes Research Center, I wrote a study design protocol, a patient consent form and formalized survey to follow the patients over a period of 6 weeks to 3 months. With the help of Gina Russo, I translated the appropriate documents and began to identify and recruit patients. The patients were followed by weight, frequency of exercise, and time dedicated to exercise. The patients were followed by phone as well as clinic appointments.

RESULTS

Overall, 40 patients were included in the analysis of the project. All of the patients reported that they enjoyed the DVD, that it was at an appropriate level of difficulty, appropriate to do indoors, and that they liked the fact that a familiar person from the clinic led the exercise and that it was in Spanish. Six patients were lost to follow up due to lost DVD, broken DVD player, or disconnected phone number. Thirty-four patients were included in the analysis. Thirteen patients showed an increase in the frequency of physical activity, six patients had a decrease, and 15 patients had no change in the frequency of physical activity. Fourteen patients showed an increase in the amount of time dedicated to physical activity, two patients showed a decrease, 18 patients did not change the time dedicated to physical activity. Twenty-five patients showed a reduction of weight when compared to baseline. Examples of physical activity included walking, dancing, exercise cycle, or any activity that included physical exertion. We found that upon implementing the DVD there was a moderate increase in the excitement and

level of activity that the patients experienced. Overall, the patients stated they were able to take control and better manage their diabetes. The project will also be presented at the annual meeting of the American Association of Diabetes Educators (AADE) so that more Hispanic patients across the United States may benefit and overcome barriers that hinder their own diabetes management.

The staff at the CHC has been educated on what has been done and is now distributing the exercise DVD to those in need. The staff has seen the benefit of the video and is in support of continuing this project. The clinic will be able to make more copies of the DVD to distribute to patients in the future. Six weeks was a relatively short duration of the actual study. To see a sustained effect over time, the clinic now has the training and capabilities to continue to follow these patients. This will help provide a better understanding of the patients' ability to manage their diabetes. This would include re-weighing and evaluating the patients in an additional six to twelve weeks.

REFLECTION

As I look back on my time in the Scholar's program, I remember many lessons of compassion, love, gratitude, needs, wants, enjoyment, diversity, teamwork, vision, satisfaction, patience, and leadership. The Scholar's program has helped me focus on others rather than myself. It has opened my eyes to a diverse world of needs and how I, although young and inexperienced, am capable of making a difference in someone else's life by even the smallest efforts. To a typical student on a university campus, the principles the Scholar's program focuses on may seem simple, but as I was able to sincerely implement these principles into my own life, I caught fire and was amazed at the learning and growth that took place in my own life.

I no longer felt that I was entitled to my basic human needs. I found new appreciation for the things I was blessed with and sought how to help provide those same blessings to others.

My ISP was truly a capstone of the many things that I have learned in the Scholar's program. Not only was I satisfying a need that would benefit others, but I was able to learn great amounts of leadership in forming a committee. I was able to improve communication skills as I worked with my committee members, community partners, and patients. This project helped me to set goals and follow deadlines. I was able to challenge myself and understand the resources of community partners. I was amazed at the impact that the DVD had on patient's lives. Many patients for different reasons, whether it was economic, lack of motivation, or simply not knowing where to start, were grateful for the support that the DVD provided.

There was one patient in particular that became very enthusiastic and proud of her progress. She has had diabetes for several years and never really understood how to manage her diabetes. To her the concept of an exercise program was far-fetched. She was overweight and very dependent on her mother since she is illiterate in Spanish, let alone English. Even as we were enrolling her into the program I was a little skeptical of her ability to adhere to the program and her motivation to participate in the follow up. The next time she presented to clinic, she was not even due for the follow up, but specifically found me to report that she had been using the DVD and would like to be re-weighed. As we re-weighed her and found that she had indeed lost weight, her enthusiasm grew. She continued to smile as she left the clinic. Her mother reported that the DVD was great in that the DVD included someone her daughter knew, was simple and easy to implement at home, and that it was a relief to have a Spanish language DVD at no cost. It was a pleasure to continue to see that individual patient monitor her progression. As I think

about that patient, I learned never to pass judgment or to discredit someone's ability or motivation. She is a great example to me of determination and optimism.

Through pharmacy school I had learned different approaches to counseling patients, but through my ISP I learned how one can make a difference in someone else's life by genuinely caring, fulfilling a need, building a relationship, and trying to understand. In spite the Spanish language that I know or what I thought I understood about the Hispanic culture, I come away from this project a better person by simply working with this population. I have a hard time deciding who really benefited the most: the patients that I was able to work with or me.

APPENDIX

Haciendo Ejercicio

Name _____ Age _____

Phone _____ Alternate Phone _____

Do you take medication for Diabetes? Y N Height _____

Do you take medication for cholesterol? Y N Weight _____

Do you take medication for blood pressure? Y N

How many times per week do you do physical activity?

- a) 0
- b) 1-2
- c) 3-4
- d) 5-7

How many minutes, on average, do you do physical activity each time?

- a) 10-15
- b) 20-30
- c) 30-60
- d) >60

What type of physical activity do you do?

- a) Walking
- b) Dancing
- c) Treadmill
- d) Cycling
- e) Other _____
- f) None

For office use only:

Baseline Weight _____

BMI _____

Follow up phone call date _____/_____/_____

Follow up education visit date _____/_____/_____

Education on Diet? Y N

Education on Video? Y N

Phone Call Follow-up Date _____

Are you using the video? Y N

What types of exercises are you doing most? Walking Sitting

How many times per week are you using the video? _____

For how many minutes do you use the video each time? _____

Do you think the video is;

- a) Too hard
- b) Just right
- c) Not hard enough

What changes have you made to your diet? _____

What changes have you made to your exercise routine? _____

Post Evaluation

How many times per week do you use the video?

- a) 0
- b) 1-2
- c) 3-4
- d) 5-7

How many minutes, on average, do you use the video each time?

- a) 10-15
- b) 20-30
- c) 30-60
- d) >60

What types of exercises are you doing most? Walking Sitting

What type of physical activity do you do, besides the video?

- a) Walking
- b) Dancing
- c) Treadmill
- d) Cycling
- e) Other _____
- f) None

For office use only:

Final Weight _____ Final BMI _____

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