

12-2019

## Diabetes and Effectiveness of Gym Usage

Roberto Moore  
*California State University, Monterey Bay*

Follow this and additional works at: [https://digitalcommons.csumb.edu/caps\\_thes\\_all](https://digitalcommons.csumb.edu/caps_thes_all)



Part of the [Community Health and Preventive Medicine Commons](#), [Environmental Public Health Commons](#), [Health Services Research Commons](#), and the [Public Health Education and Promotion Commons](#)

---

### Recommended Citation

Moore, Roberto, "Diabetes and Effectiveness of Gym Usage" (2019). *Capstone Projects and Master's Theses*. 620.

[https://digitalcommons.csumb.edu/caps\\_thes\\_all/620](https://digitalcommons.csumb.edu/caps_thes_all/620)

This Capstone Project (Open Access) is brought to you for free and open access by Digital Commons @ CSUMB. It has been accepted for inclusion in Capstone Projects and Master's Theses by an authorized administrator of Digital Commons @ CSUMB. For more information, please contact [digitalcommons@csumb.edu](mailto:digitalcommons@csumb.edu).

Diabetes and Effectiveness of Gym Usage

Roberto A. Moore III

YMCA'S Diabetes Prevention Program and Bill Proulx

Collaborative Health & Human Services

Department of Health Human Services and Public Policy

California State University Monterey Bay

October 10, 2019

Author Note

Roberto A. Moore III, Department of Health Human Services and Public Policy, California State University Monterey Bay. This research was supported by YMCA'S Diabetes Prevention Program. Correspondence concerning this article should be addressed to Roberto Moore III, California State University Monterey Bay, 100 Campus Center, Seaside, CA, 93955. Contact: Robmoore@csumb.edu.

### **Abstract**

The Central Coast YMCA's Diabetes Prevention Program (DPP) exists to support community members who are diagnosed as pre-diabetic. DPP participants are provided a free membership to the YMCA's gym, but are under utilizing this resource. Some reasons that participants may not be utilizing the gym are lack of time, work schedules, the language barrier in utilizing the equipment and childcare concerns. If participants are not utilizing the gym they may not complete the program and may be at risk of contracting diabetes and possibly losing a limb. In order to understand the specific barriers for this group in utilizing this resource, a survey was developed and distributed to English speaking participants of the DPP. That survey concluded the greatest barriers were time management and work schedules. With this in mind, it is recommended that time management support be a part of session zero, to set up participants for success.

*Keywords:* YMCA, diabetes, resources, time management, barriers, prediabetic

### **Agency & Communities Served**

The YMCA's mission statement is to put Christian principles into practice through programs that build healthy spirit, mind and body for all. For decades, the YMCA's mission has been central and foundational to the community. In that Christian principles are caring and inclusive, they respect various expressions of religion.

Programs and services the YMCA provide range from child care to fitness and wellness programs and even offer tutoring for students who struggle with academics. The YMCA offers free memberships for families who cannot afford the cost (YMCA, 2018). Their vision is to expand their impact by helping more people gain the skills and support needed to live healthy and fulfilling lives.

Participants who are eligible for the program are prediabetic and over the age of 18 years old. Fifty percent of the YMCA's Diabetes Prevention Program (DPP) participants are Latino. The YMCA partners with clinics from around the Monterey County and receives referrals for participants who have a body mass index of 25 or higher, along with self referrals. Once their referral is sent, the YMCA calls the potential participants and sees which class is best for them to attend (YMCA, 2018). The locations of where the YMCA offers their DPP classes are as follows; Salinas, Watsonville, Monterey, San Benito (Hollister) and South County (Gonzales and Soledad) (YMCA, 2018).

### **Problem Description**

The YMCA's Diabetes Prevention Program participants are not utilizing all the resources that are available to them. Prediabetes occurs when blood sugar levels are higher than normal but not high enough for a type 2 diabetes and may be reduced or eliminated by weight loss, healthier

eating and increased physical activity (YMCA, 2018). What the YMCA offers for individuals who are diagnosed as prediabetic are classes on how to improve their lifestyle along with a gym membership, so that the individual does not become diabetic.

With the classes, participants are taught how to eat healthy and learn the benefits of exercise to help them to achieve the program's goals. Participants are also given a gym membership to help them achieve their goals of 150 minutes of physical fitness each week and losing 5% to 7% of body weight. Participants may not be successful because many are not confident in using the gym. Since the participants do not ask for help on how to use gym equipment they become discouraged from going to the gym and stop going, which may lead to them developing diabetes. According to Marino (2019), another 140,000 local residents are estimated to have pre-diabetes, or 1 in 2 people in Monterey County, compared to 1 in 3 nationally. The Latino population is especially vulnerable. One estimate is that 13.8 percent of Latinos in Monterey County have diabetes, compared to 4.8 percent whites and 4.4 percent Asians (Marino, 2019). Diabetes could be a silent killer if left undetected.

### **Contributing Factors**

A few of the contributing factors to participants not using the YMCA's gym membership, which is provided as part of the Diabetes Prevention Program, are childcare, work schedules and language barrier.

#### **Childcare & Work Schedules**

A contributing factor to not being able to use the gym equipment is having a busy schedule. Participants who work full-time and have children already have a difficult schedule, where they wake up early to get their morning routine done before rushing to work. Then, after a

long day at work, parents have to make sure their kids are picked up from school and fed, leaving no time to think about going to the gym. As stated by Harrington (2001), workers who engage in shift work or who work long hours can experience considerable disruption of family and social activities, as many of these rhythms of the general population are oriented around the day. It was explained that family and marital responsibilities can be severely disrupted by shift work or long hours. With all these other tasks at hand it is hard to make room for the gym.

### **Language Barrier**

Another contributing factor to diabetes is lack of gym usage because of a language barrier. Participants in the diabetes prevention program are expected to be active for a 150 minutes each week so that they are able to complete their goal of losing 5% to 7% of body weight (YMCA, 2018). Members of the Diabetes Prevention Program are not accustomed to going to the gym and using the provided equipment. Now add to the equation that participants first language is not English and everything in the gym is catered to English speakers. The intimidation of using the gym in a language you are not familiar with would scare participants from not want to use the gym. Canada has also faced the same issue as the YMCA with its Crossfit program. As stated by Rose (2013), "I think there is a false understanding that if you simply do Cross -Fit, you can pass your fitness test without studying the material. Most French people in Quebec do that and they fail the test." She then went on to say that "Many people have failed their exams not for the lack of Cross- Fit knowledge, but because of the language barrier" (Rose, 2013). Since many of the participants are monolingual spanish speakers these are similar problems that are faced.

## **Consequences**

### **Contract Diabetes**

Diabetes is a disease that occurs when someone's blood glucose level, also called blood sugar, is too high. The impact diabetes has on the agency is that in the Monterey County diabetes rates are becoming so high that 1 in 8 people have it and nationwide it is 1 in 11 (Marino, 2019). The reason the diabetes rate in Monterey County is so high is that community members are not aware that they are in the prediabetic stage. This is because diabetes has no obvious symptoms. As a result, it only makes sense that by the time a person is checked it is too late. According to González, Fuentes, and Márquez (2017) Physical inactivity is a main contributing factor because sedentary lifestyle is "damaging to health and bears responsibility for the growing obesity problems." Inactivity and being overweight go hand-in-hand towards a diagnosis of diabetes. By not being as active you lose muscle cells that have more insulin receptors than fat cells, so a person can decrease insulin resistance by exercising. Being more active also lowers blood sugar levels by helping insulin to be more effective. A higher rate of activity lowers the risk of contracting diabetes.

### **Effects of Failure**

If the participants do not use the gym they are less likely to lose the recommended body weight of 5 % to 7 %. By failing their goal the chances of them moving from Pre-diabetes to diabetes has risen. By not achieving the programs goals the success rate of the program is lowered. Once the success rate drops and participants are not seen to be completing the program,

then funding is affected. When participants are not completing the program the YMCA is not able to demonstrate that they are helping the community fight off prediabetes.

### **Lose a Limb**

According to Caffrey, Lower-limb amputations may be rising in the United States after decades of decline, according to data published in Diabetes Care, the official journal of the American Diabetes Association (2018). Caffrey went on to say that poorly controlled blood sugar that occurs in diabetes can limit blood flow to the lower legs and toes, causing nerve damage that people with the disease may not sense until problems have already developed. People with advanced diabetes may develop wounds or sores that do not heal and eventually result in loss of the damaged toe or portion of the foot or leg (2018).

### **Problem Model**

<b>Contributing Factors</b>	<b>Problem</b>	<b>Consequences</b>
Lack of time/ Work schedules	DPP participants are not utilizing resources provided to them	Will not complete the program and not reach the goal of losing 5 to 7% body weight
Language barrier		Contract Diabetes
Childcare		Lose a limb

### **Capstone Project Description and Justification**

#### **Project Purpose**

The project purpose was to gain a better view of the effectiveness of gym usage by DPP participants. The purpose of this project was to create healthy habits. The gym is being offered to



them as a free service from joining the program. By conducting the survey we are trying to figure out what is keeping them from using the services provided. There is a major need for this because the Diabetes Program participants are not familiar with going to the gym and how to use the equipment. It would be helpful if the classes were to go over the gym equipment. The reason the survey would be helpful is, so that the YMCA Staff will be better prepared to assist gym members who are second language learners as well as first time gym users.

### **Project Justification**

The main goal of the survey was to ensure that its participants are heard as to why they are not able to attend the gym more frequently. The Centers for Disease Control and Prevention has made a curriculum for how to stay out of the Diabetic scope, which the DPP course sticks to (CDC, 2018). They have not created a method to assist people who are not familiar with gym equipment. Therefore a survey was created and the cohort coaches gave them to the Diabetes Prevention participants. Questions such as: How often do you use the gym? Do you go with someone from class? Does your family encourage your lifestyle change? By doing this the YMCA's Diabetes Prevention Program will have a better understanding of whether or not the program is working to help participants achieve the program goal of 150 minutes of physical activity a week.

### **Project Implementation**

In order to understand barriers in utilizing the gym, a survey was created. Questions were created with the support of the Executive Director of Branch Operations. After finalizing the questionnaire, a copy was placed in each of the cohorts folders and there was an announcement via email informing the coaches to check their cohorts folders.

Surveys were distributed to participants between May and August of 2019 and returned to the DPP office. Due to staffing changes surveys that were collected over the summer were misplaced, and this setback required that new surveys were distributed in September 2019.

A Google Form was created to input the survey data, so that results could be tracked as soon as the surveys were input. Surveys were then input into a system to analyze the results. A detailed implementation plan and timeline can be seen in the Scope of Work in Appendix A.

### **Assessment Plan**

The way the surveys measured the effectiveness of gym usage was by giving surveys to participants in all of the Diabetes Prevent Program english classes. Surveys with questions regarding gym usage and the benefits and participants were able to write in why they were not able to use the gym and why they were able to. The project would be deemed successful if 70 percent of surveys were returned.

### **Expected Outcomes**

The purpose of this project was to find out why people are not using the gym that is provided to them through the program so that they can meet their goals and live a healthier life. Expected outcomes from this project will be to gain a better understanding as to what is prohibiting program participants from the services that are given to them. Once that is established give the information gained through the survey to the YMCA's Diabetes Prevention Program. Then the Executive Director of Branch Operations and his staff will become more aware of the contributing factors of gym usage while being in the program. Once the surveys are handed back a plan will be created to promote gym usage. The surveys will be created in both Spanish and English so that no cohorts are left out.

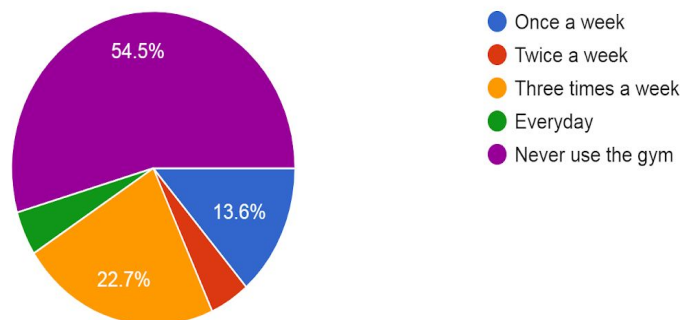
### Project Results

After conducting research the results were able to give a better understanding of why diabetes prevention program participants are not using the resources that are provided. Over 40 surveys were sent out and 22 replied. The first question was how often do you use the gym? 54 percent said they never used the gym. 13 percent said they used the gym once a week, 4.5 percent said they used it twice a week, 22.7 percent said they used it three times a week and 4.5 percent said they used it everyday. This frequency can be seen in Figure 1 below.

Figure 1: Frequency of gym usage

How often do you use the gym?

22 responses



When asked what benefits have you noticed about yourself since you have been going to the gym, 14 percent of participants had said that they had more energy and seven percent said they felt healthier and were sleeping better along with less stress. Additional benefits of using the gym were joints moving better, sleeping better, more energy and feeling healthier.

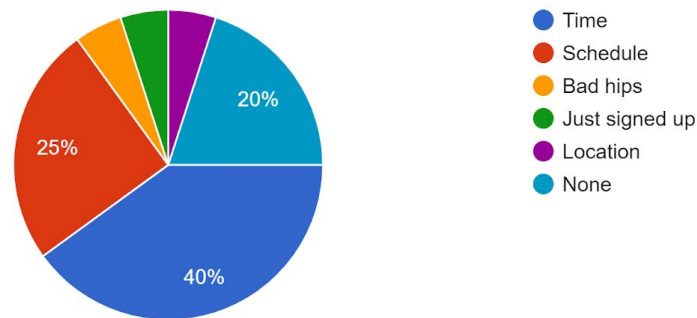
However, when asked, “What barriers prevent you from attending the gym?,” 40 percent responded that time is their biggest barrier. This follows with 25 percent saying schedule is their

greatest barrier, and 20 percent said there were no barriers or didn't answer. These barriers can be seen below in Figure 2.

Figure 2: Barriers to gym usage

### What barriers prevent you from attending the gym?

20 responses



### Conclusion & Recommendations

The goal was to receive back 70 percent of surveys, however, only 55 percent of surveys were returned. Even though not all surveys were returned, they were still able to provide relevant findings. Time was the greatest barrier for participants not using the gym. It is recommended that time management support be a part of session zero, to set up participants for success.

The toughest part of the project was the survey collection process because coaches either misplaced them or did not return them in time. In the future It would be advised to send the coaches the survey via email so they can print them out. A reason why the project did not go perfectly was most of the surveys were lost and not placed back in their appropriate folders. In the future it is recommended that the YMCA do outreach someplace other than the YMCA so that other people are able to join the program and gain a better understanding of what the DPP is.

### **Personal Reflection**

Reflecting back on my experience at the YMCA and the Diabetes prevention program, I have gained a lot of experience that I believe will help me in my professional career. Starting off with my professional development by learning how to fax paperwork to doctors offices and proper phone etiquette. Along with mailing final contact letters to participants who have not been in contact with the YMCA. But once the surveys were returned and the data was imputed the process became easier once I had the results in hand. Another barrier that was faced was that I created open ended questions instead of multiple choice ones, which made my results come back scattered. The hardest part was getting support when I needed it at the end from mentors. This happened because of the staff change which saw one of my mentors leave and another one get promoted. Which left me without the proper in office support to make sure my surveys would not get misplaced. Going forward it would be recommended that future interns seek help from mentors prior to the due dates of assignments and give adequate notice so mentors are not bombarded with every assignment at once.

### References

- Babey, S. H., PhD, Wolstein, J., PhD, Diamant, A. L., MD, & Goldstein, H. (2016, March). Prediabetes in California: Nearly Half of ... Retrieved April 30, 2019, from <http://healthpolicy.ucla.edu/publications/Documents/PDF/2016/prediabetes-brief-mar2016.pdf>
- Caffrey, Mary. "Diabetic Amputations May Be Rising in the United States." AJMC, 13 Dec. 2018, [www.ajmc.com/newsroom/diabetic-amputations-may-be-rising-in-the-united-states](http://www.ajmc.com/newsroom/diabetic-amputations-may-be-rising-in-the-united-states).
- Center for Disease Control and Prevention (CDC). (2018, October 30). People at risk for type 2 diabetes. Retrieved from <https://www.cdc.gov/diabetes/prevention/people-at-risk.html>
- Harrington, J. (2001). Health effects of shift work and extended hours of work. *Occupational and Environmental Medicine* 2001;58:68-72.
- González, K., Fuentes, J., & Márquez, J. L. (2017). Physical Inactivity, Sedentary Behavior and Chronic Diseases. *Korean journal of family medicine*, 38(3), 111-115.
- Guozhong H, Karen Black, MSIS, Susan Lopez-Payan, Karin Omark, MPH, EdM, and DeanSchillinger, MD. (2009)Diabetes in California Countries
- Rose, K. (2013). Overcoming the language barrier
- Marino, P. (2019, January 24). A major diabetes threat brings together Monterey County health care providers in a fight for lives. Retrieved from [http://www.montereycountyweekly.com/news/cover\\_collections/a-major-diabetes-threat-brings-together-monterey-county-health-care/article\\_ed785da2-1f62-11e9-88b5-5357dd620765.html](http://www.montereycountyweekly.com/news/cover_collections/a-major-diabetes-threat-brings-together-monterey-county-health-care/article_ed785da2-1f62-11e9-88b5-5357dd620765.html)

Nall,R (n.d.). An overview of diabetes types and treatments. Retrieved from

<https://www.medicalnewstoday.com/articles/323627.php>

YMCA.(2018). Youth Development For Healthy Living For Social Responsibility. Retrieved

from <https://www.ymcatriangle.org/programs-services>

### Appendix A

#### Scope of Work

<b>Activities</b>	<b>Deliverables</b>	<b>Timeline/Deadlines</b>	<b>Supporting Staff</b>
Did research on barriers		January 26, 2019	
Create gym usage survey	Survey worksheet	May 20, 2019	
Send Bill the survey	Email	Nov/Dec 2019	Bill
Sent survey via email to Coaches so they can pass them out to cohort coaches	Via email or printed out handout and leave in class folders	End of April/ May 2019	Bill/Jennifer
Gather information from questionnaire to calculate results	Data on worksheets	Mid May - September 2019	YMCA DPP Coaches
Created second set of surveys		August 28, 2019	Bill
Resend surveys		September 2, 2019	Bill
Data analysis of surveys		September 11, 2019	Bill
Recommends after results		October 8, 2019	
Finalized capstone project		October 11, 2019	Caitlin / Shelby



**Appendix B**  
**Participant Survey**

**Diabetes Prevention Program gym: Collect data on participants who use gym**

Class location :

**How often do you use the gym? \***

- Once a week
- Twice a week
- Three times a week
- Everyday
- Never use the gym

**Do you use the buddy system? \***

- Yes
- No

**What barriers prevent you from attending the gym?**

**Have you made a wellness appointment? ( Y Fit)**

- Yes
- No

**What benefits have you noticed about yourself since you have been going to the gym?**

**How often do you think about going to the gym?**

**Do you go to another gym instead of the YMCA?**

- Yes
- No