

California State University, Monterey Bay
Digital Commons @ CSUMB

Capstone Projects and Master's Theses

Capstone Projects and Master's Theses

5-2021

Should I Reduce My Red Meat Consumption?

Joshua Kojiro Bibbee
California State University, Monterey Bay

Follow this and additional works at: https://digitalcommons.csumb.edu/caps_thes_all



Part of the [Community Health and Preventive Medicine Commons](#)

Recommended Citation

Bibbee, Joshua Kojiro, "Should I Reduce My Red Meat Consumption?" (2021). *Capstone Projects and Master's Theses*. 1005.
https://digitalcommons.csumb.edu/caps_thes_all/1005

This Capstone Project (Open Access) is brought to you for free and open access by the Capstone Projects and Master's Theses at 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.

Should I Reduce My Red Meat Consumption?

Joshua Bibbee

Debra Dunn

Collaborative Health & Human Services

Department of Health Human Services and Public Policy

California State University Monterey Bay

September 7, 2020

Author Note

Joshua Bibbee, Department of Health Human Services and Public Policy, California State University Monterey Bay. This research was supported by Monterey County Health Department Employee Wellness. Correspondence concerning this article should be addressed to Joshua Bibbee, California State University Monterey Bay, 100 Campus Center, Seaside, CA, 93955. Contact: jbibbee@csumb.edu.

Abstract

Maintaining and improving the health of 5,000+ county employees is no easy task, but the Monterey County Health Department Employee Wellness (MCHDEW) program's job is to do just that. There are many parts that fall under the category of health, and one area to research on is red meat consumption. A diet high in red meat can cause some of the health conditions of metabolic syndrome, which is a cluster of health conditions that increase a person's risk of heart disease. This is relevant because metabolic syndrome is found in one-third of county employees, and this contributes to increased healthcare costs. Some conditions of metabolic syndrome are high blood pressure and high glucose levels. A live webinar was held on Zoom to address the high metabolic rates of county employees. The goal of this class was for participants to rethink their diet, and to reduce their red meat consumption to live a healthier life. If employees can reduce their red meat consumption, their chances of getting metabolic syndrome are reduced, and they will not have to spend money to treat it. There are no results to prove that red meat consumption will be reduced as no post-surveys were filled out.

Keywords: red meat, diet, health

Agency & Communities Served

The Monterey County Health Department Employee Wellness (MCHDEW) program strives to maintain and improve the health of their county's 5,000+ employees. This public agency was founded in 1985 from three different groups: employees, unions, and management (MCHDEW, 2020). Their mission is to “address the health and safety needs of Monterey County staff” (MCHDEW, 2020, para. 1). Their target audience are Monterey County employees between the age of 25 to 65 years old. When you have a workforce of more than 5,000 employees, health and safety are a top priority. Four things the MCHDEW (2020) commit to doing are

- Improve employee health and well-being (para. 2)
- Provide health education and lifestyle skill development opportunities that empower employees to achieve optimal well-being (para. 2)
- Enhance employee morale and job satisfaction (para. 2)
- Improve performance and productivity (para. 2).

Gender	
Male	19.6%
Female	80.4%
Age (years)	
21-30	16.1%
31-40	30.3%
41-50	26.8%
51-60	19.4%
61-70	7.0%

71-80	0.4%
Race	
White	18.5%
Black	2.2%
Asian	9.2%
Hispanic	63.2%
Others	7.0%

This table represents a sample of the demographics of Monterey County employees from the *Know Your Number Aggregate Report*, by Orthus Health. About 80% of the population is female and 50% of the population is aged between 31-50 years old. The most prevalent race is Hispanic, which accounts for almost two-thirds of the population.

Employee Wellness cares about the health and well-being of its employees. It is the number one priority. Without healthy employees, this county would not be operating well. They want employees to make better choices and to maintain themselves. Not only does this benefit themselves, but those around them as well. In the 2018-2019 Annual Wellness Report (Pouch, n.d.), 73% of employees reported that they made improvements in eating habits and 70% made improvements in exercise habits. These numbers demonstrate that the programs/activities this agency hosts are effective. Employees are using the knowledge gained and applying it to their lives.

A community asset of Employee Wellness are their contracts with experts and local hospitals. Employee Wellness does not teach any of the programs/activities, they just manage it. Instead, they contract with experts like Dr. Potterton who teaches time management classes. Another contract MCHDEW has is with CHOMP (Community Hospital of Monterey Peninsula). CHOMP has guest speakers to talk about health, and working collaboratively, they host a free wellness clinic in February for all county employees. At this clinic, employees can have their vitals taken, and talk to a nutritionist to review their diet and make any changes needed to live a healthier lifestyle (D. Dunn, personal communication, September 22, 2020). Having contracts like these improve the health and well-being of Monterey County employees.

Another community partner of MCHDEW is Walmart. Working collaboratively, they host a free flu clinic in October for all county employees. MCHDEW manages this clinic while CHOMP brings medical staff in to diagnose and evaluate the employee's health. Both clinics are hosted all over the county to accommodate employees that work in smaller towns such as Soledad and King City.

Problem Description

The metabolic syndrome rate for Monterey County employees is too high. 33.6% of employees are classified as having this syndrome, which is 0.4% above the national average (Orthus Health, 2020). According to the ATP (Adult Treatment Plan) III guideline, waist circumference, triglycerides, HDL, blood pressure, and glucose are used to determine if someone is classified as having metabolic syndrome (Orthus Health, 2020). All these conditions increase a person's risk for heart disease, stroke, and type two diabetes (Mayo Clinic, n.d.).

Contributing Factors

Metabolic syndrome is primarily caused by people being overweight or obese, and living a sedentary lifestyle (Mayo Clinic, n.d.). Monterey County employees recorded higher percentages of being overweight or obese than the national average (Orthus Health, 2020). Bankowski et al. (2011) reports that people who live a greater sedentary lifestyle are at a higher risk of metabolic syndrome. Another cause of metabolic syndrome is insulin resistance (Mayo Clinic, n.d.). If our pancreas cannot function properly, excess blood sugar gets stored as fat, which equates to weight gain (CDC, 2019). Insulin resistance is important because it is a cause of type two diabetes (CDC, 2019). Diabetes is already a problem for employees, as 6.1% of them self-reported that (Orthus Health, 2020). Specific demographics are not provided for each condition in the *Know Your Number Aggregate Report*, by Orthus Health, but demographics for the study population are provided.

Consequences

A consequence of a high metabolic syndrome rate are increased healthcare costs. The average annual difference in costs with someone who has metabolic syndrome (\$5,732) compared to someone who does not (\$3,581) is \$2,151 (Boudreau et al., 2009). That is a significant difference, and would easily add up to a large figure since one-third of Monterey County employees classify as having metabolic syndrome.

Increased healthcare costs also correlates with the next consequence of being absent from work. According to the U.S. Bureau of Labor Statistics (2019), local government employees employed full-time missed about 3.1 days of work in 2019 due to injury, illness, or other reasons. This was higher than the national average of 2.8 (U.S. Bureau of Labor Statistics, 2019).

Employees that are healthy are less likely to call in sick or use their sick/vacation leave (CDC, 2015). Studies have shown that good employee health positively impacts their family's health as well (CDC, 2015). This reduces the chances they have to take time off from work to take care of an unhealthy or sick family member.

Employees that have metabolic syndrome can expect to have a shorter life expectancy (American Heart Association News, 2019). Heart disease is one component of metabolic syndrome, and Americans that suffer from this and diabetes can expect to live 14 years shorter (American Heart Association News, 2019). This is important because the average life expectancy in the United States is 78.7 years (CDC, 2020). A person could lose 17% of their life due to poor health. So much can happen in 14 years, and Americans should try their best to live as long as they can.

Problem Model

Contributing Factors	Problem	Consequences
Overweight/obesity	The metabolic syndrome rate for Monterey County employees is too high.	Increased healthcare costs
Sedentary lifestyle		Absent from work
Insulin resistance		Shorter life expectancy

Capstone Project Description and Justification

A class called "Should I Reduce My Red Meat Consumption" was designed and created to encourage participants to reduce their red meat consumption. This class was 45 minutes long and was presented live on Zoom. Reducing red meat consumption can improve the health of humans, and benefit the environment. This class is important because 25% of American adults

consume more unprocessed red meat than what is recommended, which can increase risk for metabolic syndrome (Elsevier, 2019). Nearly one-third of Monterey County employees were classified as having metabolic syndrome in 2020, which is above the national average (Orthus Health, 2020). Reducing red meat consumption of Monterey County employees is one way to keep them healthier.

One reason why the Americans consume so much red meat is because of a lack of public health awareness of how it impacts our health (Elsevier, 2019). Many Americans have continued to consume red meat at high rates without knowing how it will affect their health. One-third of Americans consume about five servings (17 ounces) every week, and consuming more than three-and-a-half servings has been associated with a higher risk of death (Gelsomin, 2020). To put this into perspective, a serving of meat is about three ounces, which is about the size of a deck of cards. All too often Americans consume a steak two to four times larger than one serving size. A diet high in red meat can increase a person's risk for heart disease, stroke, and type two diabetes. Cancer is scary, and Gelsomin (2020), reports that "There is sufficient evidence to label processed meat as a carcinogen (a cancer-causing substance)." Our diet plays a huge role in our health, and if this turns out to be true, this should be a wake-up call for red meat consumers.

Surprisingly, reducing red meat consumption benefits the environment. Raising livestock produces just as much greenhouse gases as all types of vehicles combined (Greenpeace, n.d.). Greenhouse gases should be noteworthy because they contribute to climate change, which is a worldwide problem. If county employees can reduce their red meat consumption every week, humans can alleviate the impact on our environment.

For this class, I did two mock presentations to agency staff. From these presentations, I received feedback on presenting and interacting with the audience. In order to get county employees to participate, I created marketing materials using Constant Contact. This was sent out via email to county employees, and also posted in the Monday Health Tips and monthly newsletters. Despite the large amount of time I spent working on this project, I only had two participants. I was disappointed but had to factor in situations that were out of my control, such as employees being burned out from virtual learning. I have managed other Employee Wellness-sponsored classes in-person and virtual, and I have noticed that there has been a drop in participation. Had this class been taught in-person, participation would have been higher.

Project Implementation

To create this class, I used Microsoft PowerPoint. I used Qualtrics to create a post-survey. I used Microsoft Powerpoint because I have been using this program for ten years and am knowledgeable with it. I used Qualtrics because MCHDEW uses it for all the classes they offer, and I can easily email the survey to participants. It also gives me more in-depth data than Google Forms.

My role in this project was to create the class. Dunn, my mentor helped me manage creating this class and kept me on a timeline. Janet Vaughn and Vilma Andari are two staff members that have a background in nutrition, so I reached out to them when I had questions relating to the human diet. Participants were partially involved in this project, as they answered questions during the presentation but did not fill out any post-surveys.

I carried out this entire project from my laptop in my house. Due to COVID-19, I am doing my internship and school work remotely. With that being said, I did not face challenges or

COVID-19 restrictions. I spent about one hour each week working on my capstone project, and about 30 minutes talking to Dunn about it. Some topics in my presentation were health effects, red meat substitutions, and tips to remember. Most of the information used in my presentation is from this capstone report, but I had to do some additional research. A detailed implementation plan and timeline can be seen in the Scope of Work in Appendix A.

Assessment Plan

Increasing participants' knowledge and awareness of a diet high in red meat was the outcome of this class. To measure effectiveness, I sent out a survey after the presentation. In this anonymous survey, I asked them to rate me on my presentation performance and knowledge on the topic. This is important because this was my first professional presentation and I feel slightly pressured. I was constantly working on my capstone project to perfect it so I did not feel any pressure when I did my presentation. I know I will have to do more professional presentations in the future, so receiving feedback will make me a better presenter. This would have been a great assessment but no post-surveys were filled out.

Expected Outcomes

Short term outcome(s)	Intermediate outcome(s)	Long-term outcome(s)/Impacts
Participants to think about what they learned and for them to remember at least one thing from this class	Make changes in their diet	Monterey County employee health metrics to improve

Increasing participants' knowledge and awareness of a diet high in red meat is the expected outcome of this class. A short term outcome is for participants to think about what they learned and for them to remember at least one thing from this class. To measure this, a

post-survey was emailed to all participants to fill out, although none were filled out. Questions that will be included were “How likely are you to make changes to your diet,” “What is the size of a serving of meat,” and “What is a health effect from high intake of red meat?” Results from this survey will let Employee Wellness know how informative this class is and my performance. If needed, subsequent changes will be made before this class is taught again. Getting feedback on my performance would have been beneficial because this was the first of many professional presentations I will have to do in the field of public health. Preparing and presenting a presentation to professionals versus classmates is different. There are a lot more revisions that need to be made because the presentation needs to be near-perfect. In the case of this capstone presentation, I represented Employee Wellness, and did not want to ruin their credibility. County employees are taking time out of their work schedule, and I did not want to disappoint them with a poor presentation.

An intermediate outcome is for participants to make changes in their diet. Participants should reduce their red meat intake and substitute it with healthier alternatives like poultry, tofu, and beans. Changes like these can reduce the likelihood of major health effects like metabolic syndrome, obesity, and diabetes. This intermediate outcome will not be measured due to time constraints, but I presented a strong argument which I think will reduce their red meat consumption.

The long-term outcome is for Monterey County employee health metrics to improve. Some of these health metrics are metabolic syndrome, overweight/obese, and diabetes rates. Like the intermediate outcome, this will not be measured.

Project Results

I presented my capstone project on 23 March and it was great. I was prepared and confident throughout the entire presentation. All the time I spent researching, editing, and practicing paid off. Those were the positives, but there were also some negative aspects. One of which is that nobody filled out a post-survey, and two, there were only two participants. For those reasons, I have no data to share. These were sent out twice- immediately after the presentation and three weeks after. I was bummed out, but I understood the circumstances we currently face because of COVID-19.

These negatives actually allowed me to learn new things. First off, people are more likely to fill out a post-survey if physically handed to them instead of having to click on a link through email. Secondly, Employee Wellness-sponsored class participation could be down since everything is through Zoom and people are tired being behind the camera. I only had two participants, and I think I could have more had this class been taught in person. Lastly, my class was scheduled at the same time as another class. I was mad when I saw this in the flyer, and was not given a direct reason for why two classes were scheduled at the same time. My creation of this presentation and the emails promoting it were a success, but the low participation and zero post-surveys filled out were disappointing. At the end of the day, I am happy with the way my capstone project turned out.

Conclusion & Recommendations

A recommendation for this agency would be to continue to teach this class. There is a chance more people wanted to participate but could not because it was only scheduled once. Also, I think any topic food-related catches people's attention because we need it for survival and

the choices we make impacts our health. Some people are interested in the best superfoods or diets, and when someone sees the title “Should I Reduce My Red Meat Consumption,” that will definitely catch their attention. As a result, this presentation has been created for anyone to present it- there are notes on every slide to read off of. I was instructed to do this and glad I did. If my internship was longer, I would like to present it at least a few more times.

For future CHHS student interns at MCHDEW, I have two recommendations. The first recommendation is to try to intern more than one day per week or rotate your day every week. I did my in-person internship every Tuesday from 1200-1830 and usually did the same tasks every time. Rotating your schedule will expose you to different things and will allow you to get more out of your internship. The second recommendation is to collaborate with other interns/agencies. At the health department, there were other health programs in the same building: *Women, Infants & Children (WIC)*, *Quit Smoking*, and *CalFresh Health Living*. I did not collaborate with other programs, but I did collaborate with my fellow MCHDEW intern, Charlotte Pletsch. The two of us created *Holiday Challenge 2020*, a challenge that promoted healthy behaviors during the 2020 holiday season. Being able to collaborate with other programs would have been a great experience, but I did not and hope a future CHHS student intern can.

Personal Reflection

Completing a capstone project was a great experience and I am thankful for MCHDEW for allowing me to do this. I started my capstone project back in October when I was thinking about what I wanted to do. I was thinking between this topic and desk organization, but ultimately chose this one because I am passionate about nutrition and exercise, both of which can help prevent the onset of metabolic syndrome. Six months later, I am wrapping up this project

that has taught me a lot. The biggest thing I learned is the time and process it takes in order to design, implement, and present a health education class. After creating my initial draft in January, I thought my draft just needed minor revisions but I was totally wrong. I wound spending about six weeks editing, researching, and practicing my presentation to get it to a standard that could be presented to the masses. This presentation had to be perfect because the information shared had to be accurate in order for health changes to be made. Also, I do not have enough knowledge or credentials for MCHDEW to trust me to teach a class to county employees without their approval, rightfully so. But, the experience gained will allow me to create future health education programs with less guidance.

I will still remember this project 10 years down the road. Essentially, I completed a professional-level task as an intern/student. After speaking with my friends about the required internship at CSUMB, none of them said their undergraduate degree required an internship. Doing an internship and a capstone is significant- I am one step ahead of all other collaborative health and human services students. The knowledge and experience gained is valuable.

References

- American Heart Association. (n.d.). *American Heart Association recommendations for physical activity in adults and kids*.
<https://www.heart.org/en/healthy-living/fitness/fitness-basics/aha-recs-for-physical-activity-in-adults>
- American Heart Association News. (2019, July 25). *Here's how many years you could gain by keeping heart disease at bay*.
<https://www.heart.org/en/news/2019/07/25/heres-how-many-years-you-could-gain-by-keeping-heart-disease-at-bay>
- Boudreau, D. M., Malone, D. C., Raebel, M. A., Fishman, P. A., Nichols, G. A., Feldstein, A. C., Boscoe, A. N., Ben-Joseph, R. H., Magid, D. J., & Okamoto, L. J. (2009). Health care utilization and costs by metabolic syndrome risk factors. *Metabolic syndrome and related disorders*, 7(4), 305–314. <https://doi.org/10.1089/met.2008.0070>
- CDC. (2015, December 4). *Increase productivity*.
<https://www.cdc.gov/workplacehealthpromotion/model/control-costs/benefits/productivity.html>
- CDC. (2019, August 12). *Insulin resistance and diabetes*.
<https://www.cdc.gov/diabetes/basics/insulin-resistance.html>
- Bankoski, A., Harris, T. B., McClain, J. J., Brychta, R. J., Caserotti, P., Chen, K. Y., Berrigan, D., Troiano, R. P., & Koster, A. (2011). Sedentary activity associated with metabolic syndrome independent of physical activity. *Diabetes care*, 34(2), 497–503.
<https://doi.org/10.2337/dc10-0987>

Elsevier. (2019, June 21). *Americans still eat too much processed meat and too little fish.*

Eurekalert. https://www.eurekalert.org/pub_releases/2019-06/e-ase061719.php

Gelsolmin, Emily. (2019, December 30). *An omnivore's dilemma: How much red meat is too much?* Harvard Health Publishing.

<https://www.health.harvard.edu/blog/an-omnivores-dilemma-how-much-red-meat-is-too-much-2019123018519>

Greenpeace. (n.d.). *Eating less meat, more plants helps the environment.*

[https://www.greenpeace.org/usa/sustainable-agriculture/eco-farming/eat-more-plants/.](https://www.greenpeace.org/usa/sustainable-agriculture/eco-farming/eat-more-plants/)

Mayo Clinic. (2019, March 14). *Metabolic syndrome.*

<https://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/symptoms-causes/syc-20351916>

Monterey County Employee Wellness Program. (2020, May 4). *Monterey County Employee Wellness Program.*

<https://www.co.monterey.ca.us/government/departments-a-h/health/public-health/monterey-county-employee-wellness#wellness>

Orthus Health. (2020, May 21). *Know your number aggregate report.*

file:///C:/Users/joshu/AppData/Local/Packages/microsoft.windowscommunicationsapps_8wekyb3d8bbwe/LocalState/Files/S0/55/Attachments/KYN%20Baseline%20Report_County%20of%20Monterey2020[2280].pdf

U.S. Bureau of Labor Statistics. (2020, January 22). *Labor force statistics from the current population survey.* <https://www.bls.gov/cps/cpsaat47.htm>

Appendix A

Scope of Work

This scope of work is broken down into five phases: select capstone project, plan project, implement project, assess project, and report on project findings. Phases one through four will start in October 2020 and finish in March 2021. The fifth phase will be in April 2021. Some activities are discussions with my mentor, creating a Microsoft Powerpoint, and presenting it at the capstone festival. Some deliverables are brainstorming, creating surveys, and being present at the capstone festival.

Title: Should I
Reduce My
Red Meat
Consumption?

Project
Description:
Create a class
to present to
Monterey
County
employees

Goal: To
reduce red
meat
consumption
in Monterey
County
employees

Primary
Objective:
Have
participants
commit to
going meatless
one day per
week

Phases	Activities/Tasks	Deliverables	Timeline/Deadlines
1- Select capstone project	1.1- Discuss capstone project ideas with mentor and agency staff	Brainstorm and submit ideas for mentor approval	Oct-20
2- Plan project	2.1- Discuss timeline and implementation	Make deadlines and finalize how capstone will be presented	Dec-20
3- Implement project	3.1- Distribute survey about employee meat consumption	Create survey	Jan-21

	3.2- Create PPT	Create PPT	Feb-21
	3.3- Teach class	Use my PPT and present on Zoom	Mar-21
	3.4- Distribute survey after class	Create survey	Mar-21
4- Asses project	4.1- Talk to mentor	Receive feedback	Mar-21
	4.2- Review feedback	Read surveys from participants	Mar-21
5- Report on project findings	5.1- Complete reporting requirements	Final agency and capstone reports	May-21
	5.2- Prepare capstone presentation in selected format	Present at Dress Rehearsal for grading	May-21

5.3- Final preparation for Capstone Festival	Final Capstone Festival presentation !	May-21
---	--	--------