

# Empowering Medical Students: Unveiling the Benefits of Nutrition Seminars and Plant-Based Diets in Medical School Education

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## Introduction

Dietary modifications serve a strong role in preventive medicine.<sup>1,2,3</sup> The Standard American Diet has long been implicated in the development of chronic diseases such as cardiovascular disease, high cholesterol, obesity, and high blood pressure.<sup>1,2</sup> These illnesses continue to be the leading chronic diseases in the United States, all of which can be prevented with lifestyle modifications.<sup>1,2,3</sup> Physicians in training can help support preventive medicine by promoting nutrition and lifestyle interventions. Although the National Academy of Sciences recommends medical students receive at least 25 hours of nutrition education, many institutions fall short of this recommendation, limiting primary prevention education for student doctors.<sup>5</sup>

Whole-food, plant-based (WFPB) diets are derived from plants and encourages individuals to increase the proportion of foods from plant sources and to limit processed foods.<sup>2,3</sup> A recent meta-analysis concluded that incorporating healthy dietary patterns, rather than single food groups or nutrients, was more beneficial in preventing cardiovascular disease, which aligns with the WFPB dietary pattern.<sup>4</sup>

Chickpea and Bean is a non-profit organization in Detroit, Michigan whose mission is to educate people about the benefits of a WFPB lifestyle through hosting a "Plant Plunge." This four-week program challenges individuals to maximize WFPB diets while attending weekly nutrition seminars.

In this study at OUWB SOM, we observed the short-term health effects of incorporating WFPB lifestyles and explored the educational impact of weekly nutrition seminars as part of the Plant Plunge, hosted by Chickpea and Bean.

## Aims and Objectives

- To determine the clinical biomarker changes in participants who adapted more plant-based meals in their diets for 4 weeks.
- To determine the quality of nutrition education presented during the Plant Plunge and assess the need for more supplemental nutrition education in the medical school curriculum.



Figure 1. Chickpea and Bean (Marc and Kim Ramirez) and Fanny Huang.

## Methods

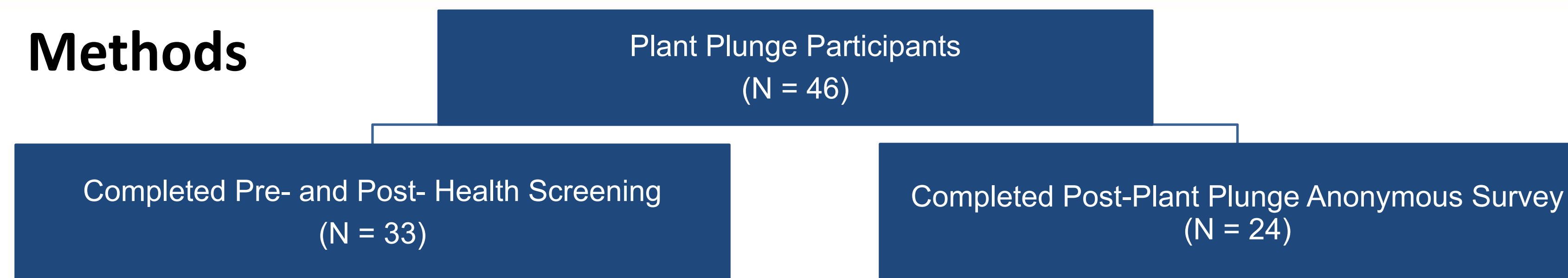


Figure 2. Plant Plunge participants. 46 students signed up to participate. Of the 46 students, 33 students participated in both the Pre- and Post- health screening. Of the 46 students, 24 of them completed the anonymous Post-Plant Plunge survey.



## Results

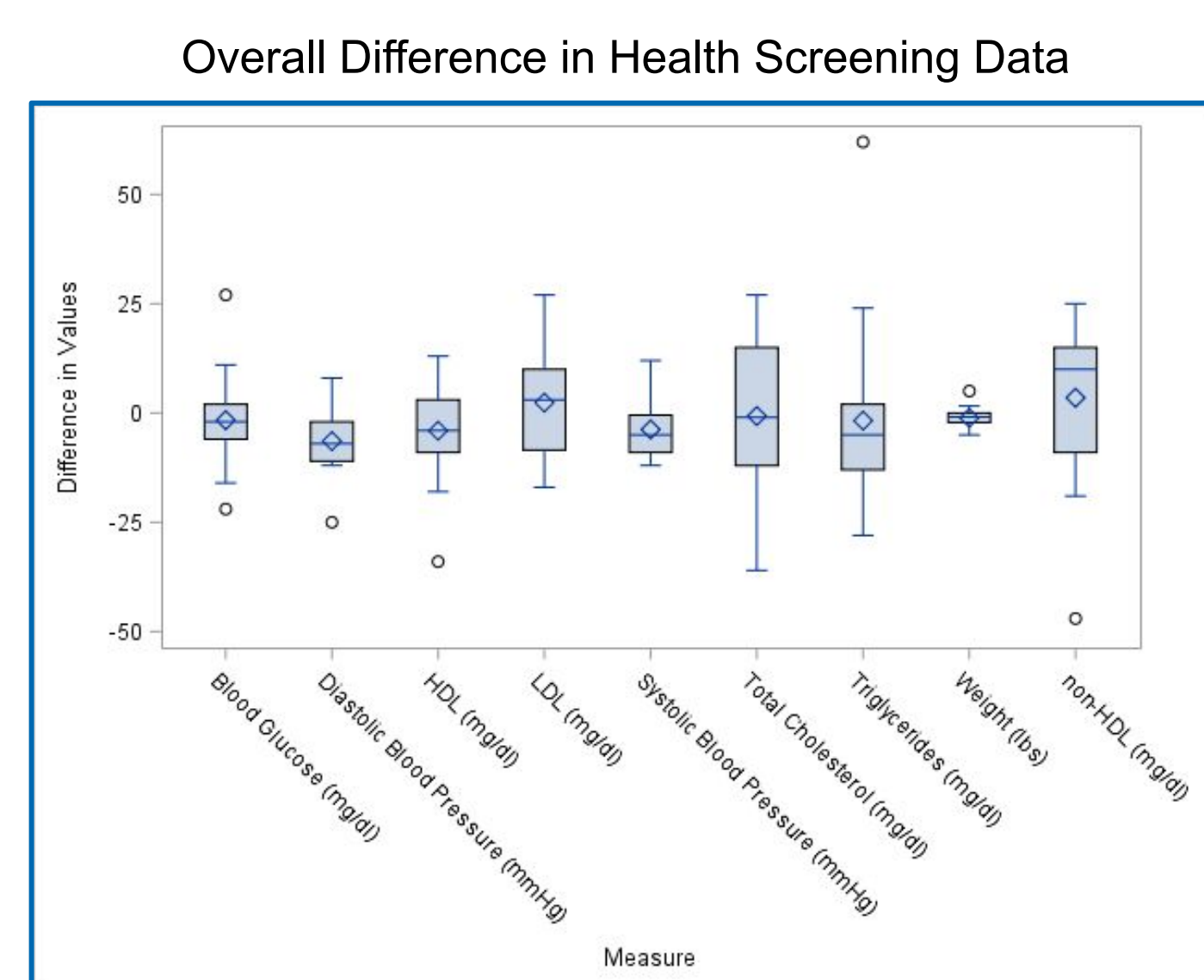


Figure 4. Participants' change in health parameters between Pre- and Post-Plant Plunge health screening.

Table 1. Significant Changes in Health Parameters

Category	Unit	P-value
<b>Difference in Weight</b>		P < 0.0461
N	18	
Median (IQR)	-0.9 (-2.2, 0.0)	
Mean (SD)	-1.1 (2.51)	
<b>Difference in Systolic BP</b>		P < 0.049
N	16	
Median (IQR)	-5.0 (-9.0, -0.5)	
Mean (SD)	-3.8 (6.70)	
<b>Difference in Diastolic BP</b>		P < 0.0037
N	16	
Median (IQR)	-7.0 (-11.0, -2.0)	
Mean (SD)	-6.4 (7.51)	

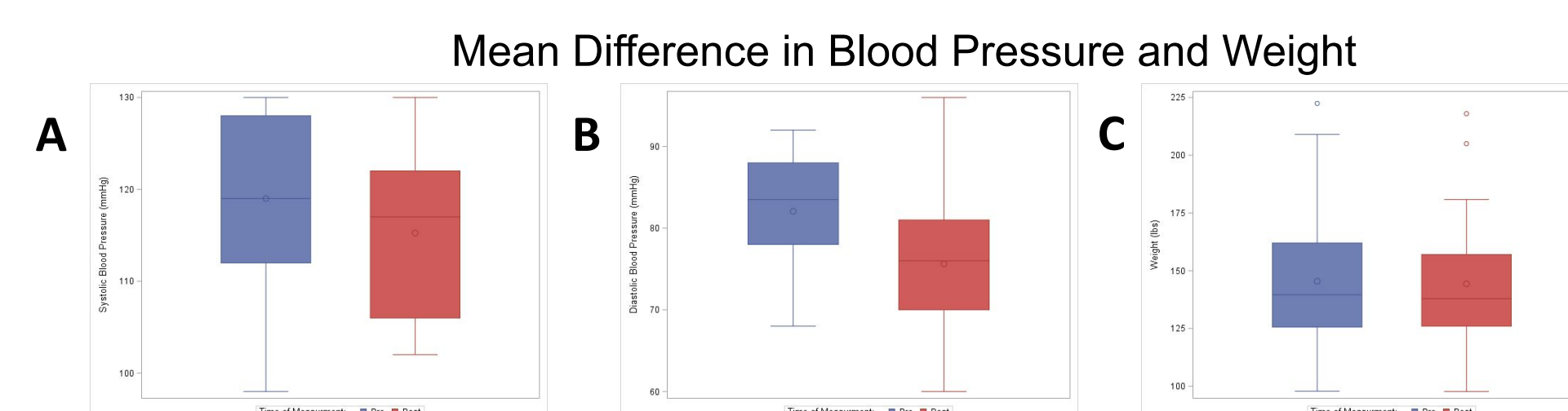


Figure 5. Pre-health screening and post-health screening data of A. systolic blood pressure, B. diastolic blood pressure, and C. weight.

Table 2. Significant Participant Responses from Anonymous Survey

Survey Statement	Disagree (N = 5)	Agree (N = 17)	P-value
After attending the Plant Plunge seminars, I now better understand the relationship between proper diets and health.	5	17	0.0010
	Mean (SD)	3.0 (1.4)	4.5 (0.5)
	Median	4.0	5.0
	Range	1, 4	4, 5
After attending the Plant Plunge lunch seminars, I have become more mindful of my eating habits.	5	17	0.0473
	Mean (SD)	3.2 (1.3)	4.1 (0.7)
	Median	4.0	4.0
	Range	1, 4	3, 5

Equal variance two sample t-test. Disagree group includes participants who selected "strongly disagree" or "disagree" to the survey statement. Agree group includes those who selected "neutral," "agree," and "strongly agree" to survey statement.

## Conclusions

Incorporation of WFPB diets can help lower blood pressure and weight loss in four weeks.

Supplemental nutrition seminars allows medical students to learn about nutrition information that has not been taught in the medical school curriculum.

Medical students who participated in all aspects of the Plant Plunge expressed an improved understanding of the relationship between diets and health and were significantly more likely to advocate for the integration of more nutrition lectures into the current curriculum.

## Discussion

Healthy lifestyle modifications can be used in primary preventive medicine to help reduce blood pressure and weight. Medical schools should consider offering more diverse nutrition electives to promote nutrition education, lifestyle medicine, and preventive medicine.



Figure 6. Chickpea and Bean, Dr. Dubay, and OUWB medical students with Veg Michigan giveaway.

## Acknowledgements

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## References

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