



Corey Hawes, Maja Redzic, Evan Cassity presenting their research at the TFISE Research Showcase

# A Pilot Study Promoting Healthy Lifestyles in a Targeted Minority Setting

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## Introduction

Obesity rates have drastically increased over the past two decades to 35.7% of the U.S. adult population. In Kentucky, 31.3% of adults are obese with 35.6% more considered overweight. Specific populations across the U.S. have much higher rates; for example, nearly 54.2% of African American women 20 years and older are obese. African American women have the highest rates of being overweight and obese of all groups in the U.S. population, with 4 out of every 5 considered overweight or obese.<sup>1</sup> Obesity greatly impacts the risks of multiple metabolic diseases. An estimated \$147 billion is spent annually on medical costs related to obesity with approximately \$1,429 more spent per year on obese compared to healthy weight individuals.

The majority of obesity cases in the U.S. are due to a combination of unhealthy eating habits and lack of physical activity. In 2013, the Center of Disease Control reported close to 45.9% of Kentuckians consumed fruit less than once per day and 25.2% of Kentuckians consumed vegetables less than once per day.<sup>2</sup> Across the country, people have shifted from home cooked meals, which tend to be healthier, to unhealthy processed meals. This shift is related to the limited knowledge about healthy food choices.<sup>3</sup> Educating the public in how to effectively read a nutrition label has been shown to increase consumption of healthier foods, and it is evident that many individuals lack knowledge about nutrition and do not have access to educational

resources.<sup>4</sup> By increasing an individual's knowledge and awareness of the benefits of nutrition, healthy eating habits, and information on how to attain a healthy lifestyle, the prevalence of obesity in Kentucky could potentially decrease.

Previous studies have utilized different types of digital media/technology as an educational resource. One such study recruited children enrolled in kindergarten to 5<sup>th</sup> grade and played educational videos while examining if fruit and vegetable intake was increased. They observed that the intervention group had higher fruit and vegetable intakes during lunchtime.<sup>5</sup> Another study examined the effect of videos played to children and observed that children who watched nutritional videos chose apples as a snack 56% of the time compared to children who watched a control video (33%).<sup>6</sup> This demonstrates that videos may be an effective means for increasing nutritional knowledge and changing behaviors toward a healthier lifestyle. To our knowledge, we are the first to investigate a video based education intervention in adults.

The objective of this pilot trial was to implement an education intervention focused on nutrition and healthy lifestyle videos supplemented with additional resources and group sessions in a targeted minority setting. Our aim was to increase knowledge about nutritional topics and to observe, by questionnaire, if our educational outreach efforts were beneficial to the targeted audience both in nutrition knowledge and behavioral changes.

### **Study Design and Methods**

The study is a non-randomized, intervention pilot trial implemented in a local hair salon. Participants were 18 years of age and older. For three months, the educational videos were played and supplemental handout materials were present in the salon waiting area. Prior to the study, topics of interest were collected from potential participants and were integrated with educational material. The nutritional knowledge and lifestyle behavior questionnaire, comprised

of questions from previously validated instruments, were distributed at the beginning and end of the study.<sup>7,8</sup>

Nutritional videos were created by University of Kentucky graduate students and were played daily. The nutritional video segments were 3-5 minutes per topic with approximately 3-4 topics covered per video (15 minutes). During the study time period, participants could participate in a Dietitian-led grocery store tour and healthy cooking alternative class during the last month of the intervention. Post-intervention, the same questionnaire as pre-intervention was distributed. In addition, an evaluation questionnaire was administered at endpoint. Statistical analysis was completed using SPSS (version 22) and a student t-test was used to analyze differences between pre- and post-questionnaire scores for total scores, knowledge based scores, and behavioral scores.

## **Outcomes**

At baseline, 25 participants completed the questionnaire. All but one participant was African American, 23 were female, and 15 were ages 55 and older. The majority of the participants had completed an Associate's degree or higher (n=17). Only 11 participants completed the questionnaire at endpoint, and all were African American females. At endpoint the majority were 55 years of age and older (n=7) and most had obtained an Associate's degree or higher (n=9).

There were no significant differences between the baseline and endpoint questionnaires for knowledge, behavioral or total scores ( $p > 0.05$ ). Although not significant, knowledge scores did increase ( $p = 0.134$ ). Overall, total average score did improve in the sample by nearly 3 points.

Although there were no significant differences noted between baseline and endpoint for the entire group, a significant difference was found in knowledge scores from baseline to

endpoint between young and old individuals. Individuals  $\geq 55$  years of age improved knowledge score significantly more than those  $< 55$  ( $p = 0.022$ ). The age group difference observed in knowledge question scores may support an increase in nutritional knowledge in older adults after nutrition based intervention.

From the intervention evaluation, 3 participants, all of whom were  $\geq 55$  years of age, watched the educational videos and 5 used the supplemental material. Six participants attended the grocery store and 9 participants attended the cooking class. However, not all of the 9 attendees completed the questionnaire and therefore the relationship between attendees and knowledge growth or behavioral change could not be analyzed.

### **Reflection**

Being a part of this research project led our team to learn multiple new skills. We worked to complete IRB forms, recruit participants, and use new technology. In addition, we were able to take what we learned in the classroom and present it to our audience through our videos. This project has helped each of us build our teaching, research, and leadership skills. One of our first obstacles was attempting to finish this project in one semester. The IRB process was lengthier than we expected and we had some students graduate or leave for the summer break and lost the additional student help. We learned that research does not always follow the timeline that is originally plan for various reasons, and it must be modified as you progress through the process. Secondly, we chose to make participation anonymous and were unable to contact participants to complete the endpoint questionnaire. As a result this greatly affected our statistical analysis and conclusion.

## **Conclusion**

Given the significant finding between age groups, a modified version of this intervention in combination with greater resources may be an effective method of increasing nutrition knowledge and promoting healthy behaviors in adults. However, the lack of follow-up with individual participants throughout the study limits the ability to thoroughly assess the effects of this intervention. Although, the majority of participants that completed the intervention evaluation considered the program beneficial.

Limitations of the study include the amount of time the education videos were played per day, the number of participants that viewed the videos and used the supplement material, and retention rate of participants at the endpoint follow-up questionnaires. Other limitations include ensuring that the participants are able to view all videos as some participants may have visited the salon only about once per month. Furthermore, some participants may not have been able to see all the videos or view the videos in their entirety due to variability in waiting time in the waiting room where videos were played. Future intervention trials should include; 1) interactive group sessions such as a cooking class or grocery store tour to promote behavior modifications, 2) a greater sample size, 3) a follow-up with participants throughout the intervention, and 4) expansion of the intervention to clinical settings.

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## Resources

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