



Introduction

A higher incidence of obesity in low-income neighborhoods is due in part to environmental barriers that directly lead to less physical activity and less healthy diets in this population¹. Limited access to outdoor and affordable indoor facilities has been shown to significantly effect physical activity². The local food environment affects an individual's diet, with a 32% increase in fruit and vegetable intake in black American's diet for each additional supermarket in their census tract³, indicating those without supermarkets nearby have less fruit and vegetable consumption and less healthful diets. The concept of "Capability" addresses the conditions that affect health, an individual's ability, and the real opportunities to make health choices⁴. The aim of this study is to determine if a new capability scale can predict an individual's health behaviors including diet and physical activity and BMI.

Methods

Participants were outpatients from 8 clinical sites of the Residency Research Network of Texas, a collaboration of family medicine residency programs. Eligibility criteria included adults ages 18-74 who spoke English or Spanish.

Procedure. Medical students research assistants approached 829 patients as they waited for their office visit, and invited them to complete the study questionnaire. 637 patients completed surveys, for a participation rate of 77%.

Measures. The 118- item patient survey included patient demographics, general health, locus of control, literacy, BMI, and the following scales:

Capability Assessment for Diet and Activity (CADA) was a 38-item measure of opportunities for healthy diet and physical activity with 9 subscales: Convenience, Barriers, Knowledge, Support (Family, Nonfamily, and Spouse), Opportunity, Time, and Respect. Subscale scores were means of item responses, coded so that higher scores represented greater opportunity.

International Physical Activity Questionnaire had 4 items addressing time spent in vigorous physical activity, moderate physical activity, walking, and sitting. For activity, minutes per week were translated into Metabolic Equivalent Task units (MET-minutes) per week.

CADA variables

- **Food Convenience** - Ease of shopping for food, fresh produce available at grocery store of high quality, affordability of lean meat or fish.
- **Physical Activity Convenience** - Nearby places to do outdoor physical activity, places open to do inside physical activity, people outside in neighborhood.
- **No barrier – Food** – Illness gets in the way of cooking meals, too tired to cook, feeling depressed prevents shopping for food
- **No barrier – Physical Activity** – health limits physical activity, partner jealousy, feeling depressed prevents physical activity
- **Opportunity** – Easy to walk in neighborhood, other people walk in neighborhood, people feel safe in neighborhood, neighborhood is well lit at night
- **Knowledge** – Know places in community to be physically active, know how to eat healthy food, know how to choose a healthy meal at a restaurant, know where to shop for healthy foods.

Results

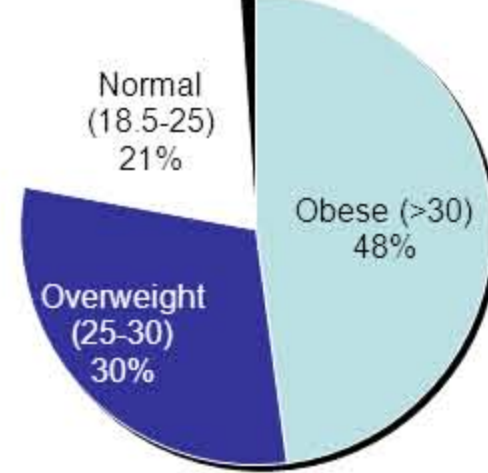
1. The study sampled 637 patients of family medicine clinics: 11.4% African American; 30.8% White; 57.8% Hispanic; 67.5% female. 62% of the patients have a monthly income below \$2000 and 38% earn above \$2000 per month.
2. CADA scores showed a significant negative correlation with BMI.
3. Obese individuals had the lowest CADA scores in each category and normal weight individuals had the highest CADA scores in each category.
4. A higher CADA predicted higher physical activity; individuals with low activity had the lowest CADA score in each category.
5. CADA variables showed no relationship to diet.

Acknowledgements

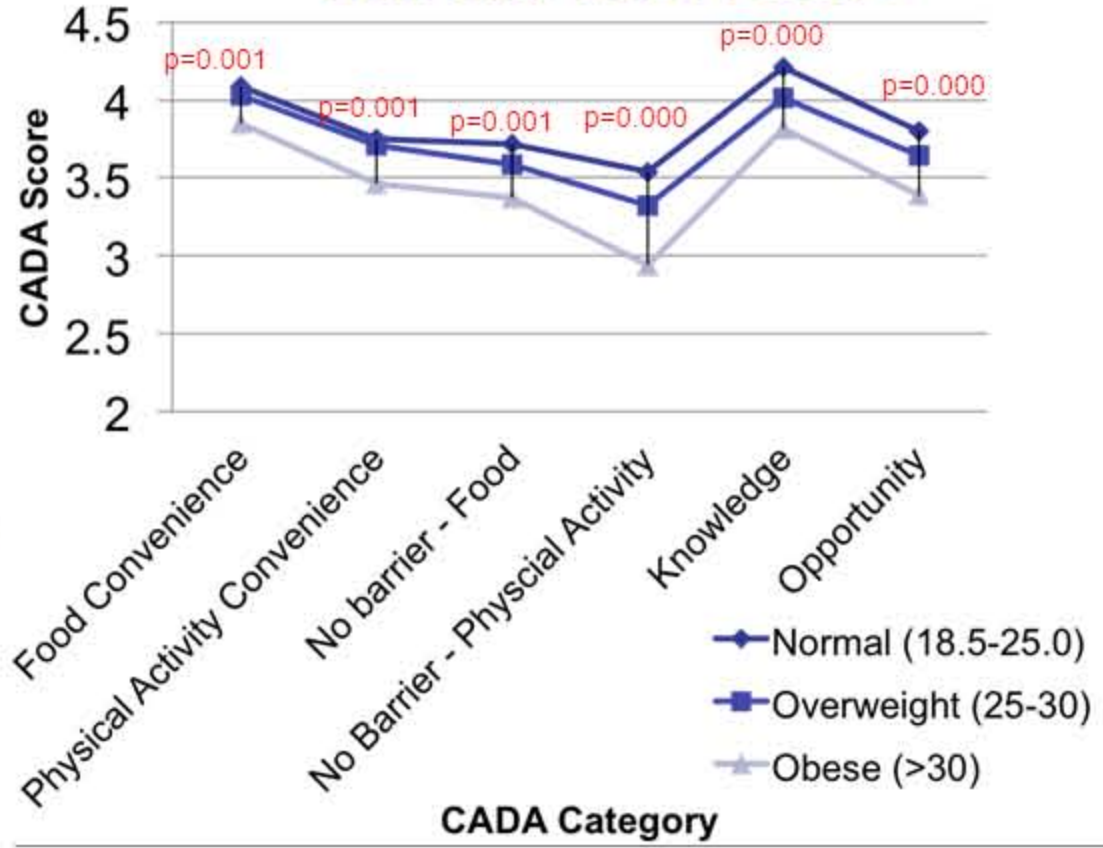
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BMI

Calculated BMI of sample

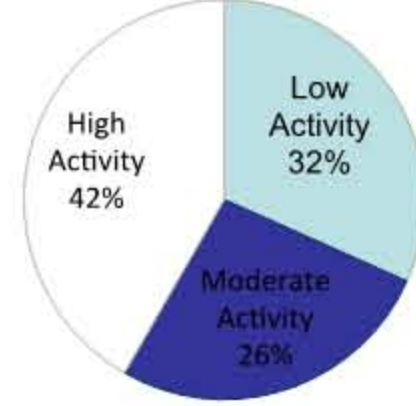


BMI and CADA Score

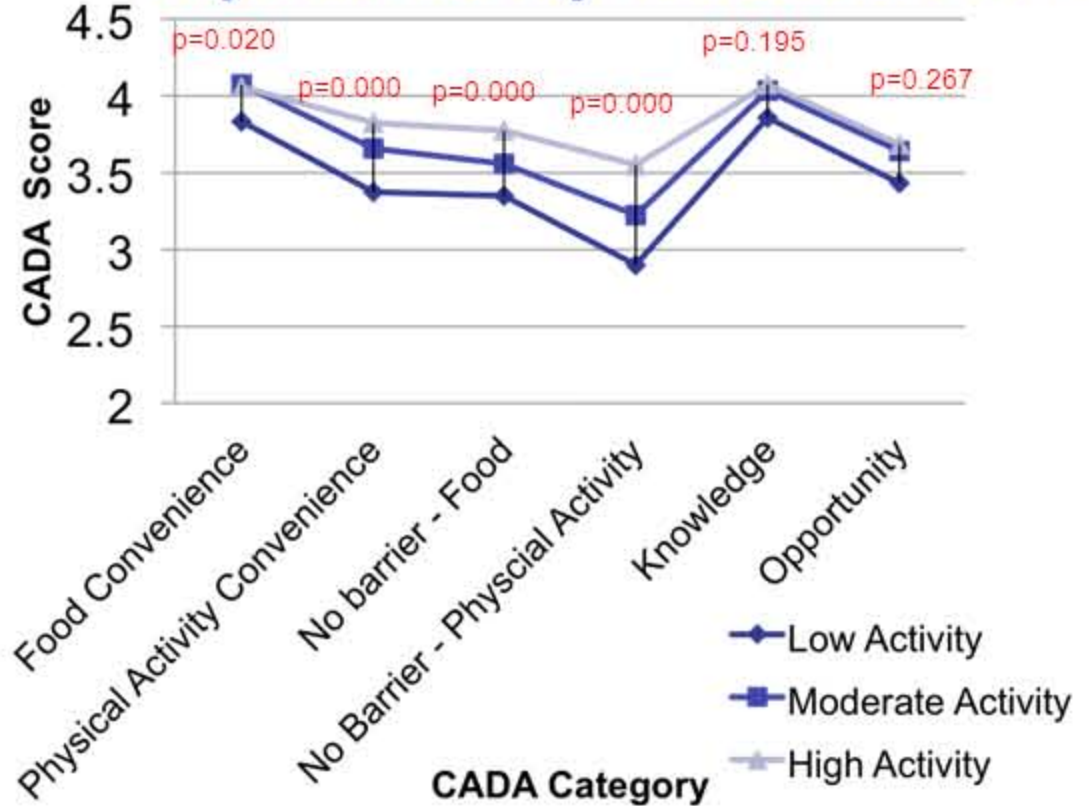


Physical Activity

Reported activity level of surveyed population



Physical Activity and CADA Score



Conclusions

This study confirms that capability is significantly related to BMI for each CADA variable tested. 'Barrier to physical activity' presented the largest group differences between obese and normal weight individuals. This confirms the previous studies that found BMI is affected by access to healthy behaviors in that those with a higher BMI scored lower in every category.² Individuals with a lower capability score also reported less physical activity. This is consistent with previous studies that found those with less accessible or safe neighborhoods are less likely to exercise and more likely to be overweight².

Our study did not show any significant relationship between capability and diet, although it was hypothesized that increased capability would improve diet. This may have been due to the low number of questions devoted to diet, as well as diet being the last field of the survey. This could be improved with a follow up study using a more accurate diet measure, such as a 3-day diet recall. Future studies could more thoroughly investigate the role capability plays with food in order to promote primary care or public health initiatives to assist those who suffer from obesity.

References

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