

Introduction

It is well established that two main contributors to preventable chronic diseases in the United States are diet and sedentary lifestyle.¹ Despite the onset of ill health, many people with poor diet or inactivity remain resistant to change. Why? The answer may lie in the fact that some populations simply do not have real opportunities to make healthy choices.

Ruger has proposed a “health capability” framework, which aims to measure opportunities for healthy living. Capabilities include neighborhood resources, a supportive social environment, good physical functioning, knowledge of what to do, and time to do it.² Research shows that the affordability of food influences one’s diet; and that residents of less affluent neighborhoods are more limited in their access to physical activity.^{3,4} In this study, we investigate the degree to which income predicts one’s capability to engage in healthy behaviors. Additionally, we will examine if certain communities provide more healthy opportunities at a given level of income.

Materials and Methods

Participants were outpatients from five 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 information about BMI, general health, diet, physical activity, locus of control, literacy and patient demographics, including gender, age, income, education, insurance status and preferred language. The concept of “opportunities for healthy behaviors” was assessed with the Capability Assessment for Diet and Activity (CADA), a 38-item measure 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.

Results

Of our sample 55.1% were female and 44.9% were male. The participants were predominately Hispanic at 55.1% with an average age of 44.51 years. The incomes between patients were fairly evenly distributed with 32.8% making less than \$1,000 dollars per month, 27.2% making between \$1,000 and \$1,999 and 38.0% making more than \$2,000. As seen in Figure 2, all of the CADA variables except for Time F and Respect demonstrated a significant correlation with income ($p < .05$). Additionally, Figure 3 displays the correlations between income and capability among our sites.

Figure 1. Patient Income Distribution



Key Terms

- Convenience F:** Healthy food is available and affordable.
- Convenience PA:** There are places in my neighborhood available for physical activity.
- Barrier F:** Illness prevents me from preparing healthy meals.
- Barrier PA:** Illness prevents me from engaging in physical activity.
- Knowledge:** I know how to live a healthy lifestyle.
- Opportunity:** My neighborhood provides safe, well lit areas for physical activity.
- Support:** My spouse, family and friends support healthy habits.
- Time F:** I have time to prepare healthy food.
- Time PA:** I have time to engage in physical activity.
- Respect:** I feel respected by society.

Figure 2. CADA Variables Associated with Income

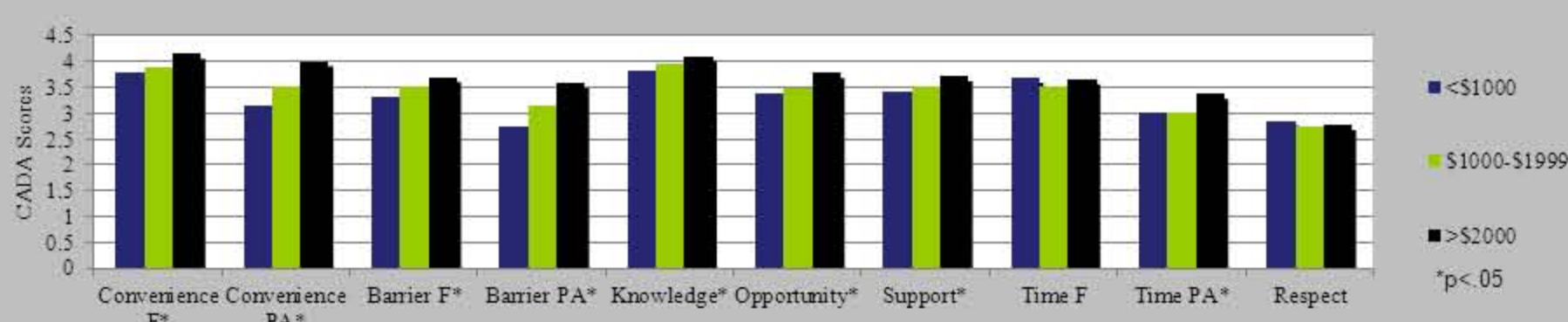
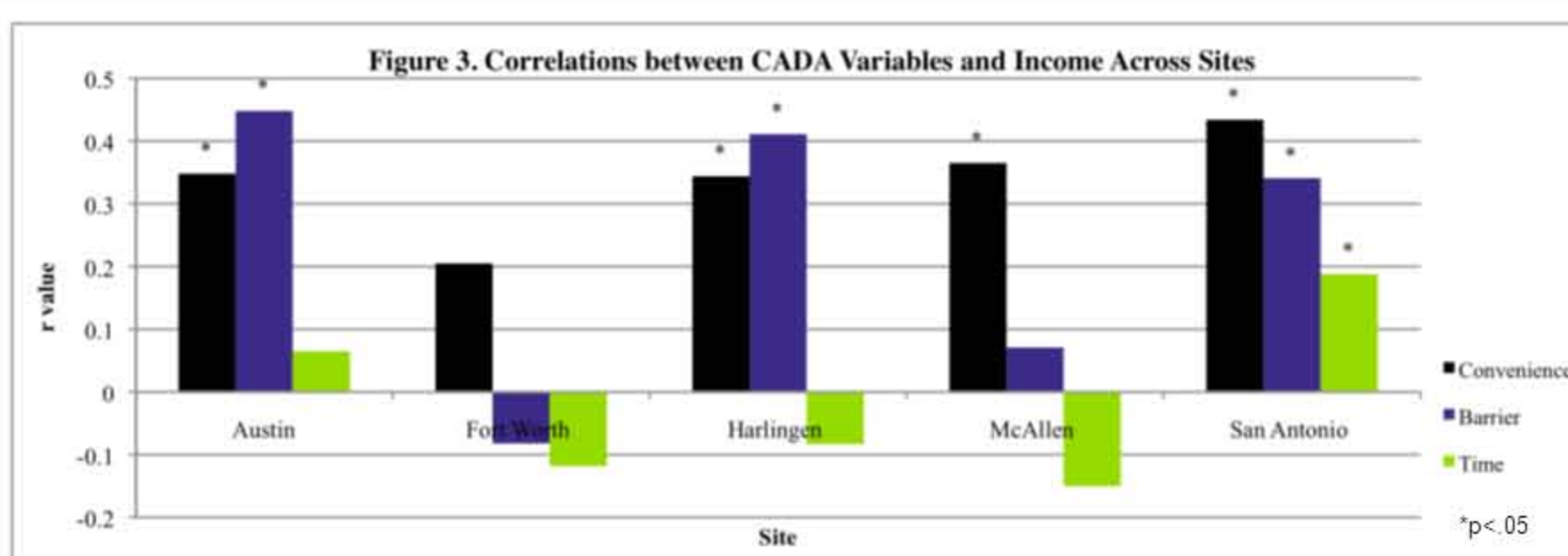


Figure 3. Correlations between CADA Variables and Income Across Sites



Conclusions

Figure 2 supports prior studies, displaying that an increase in income is significantly correlated with an increase in capability. All of the CADA correlations with income except Time F and Respect are significant. This finding suggests that across all incomes there is equal time (or lack thereof) to shop for healthy foods and prepare a nutritious meal. Some of the lowest CADA scores were in barriers to physical activity and time for physical activity. These two areas can be focused on during patient encounters to start to assess what people can change about their lifestyles so that they are physically able to exercise.

Figure 3 exhibits the site differences in CADA variables’ correlations with income. In this case a significant correlation means that the participants who are the most capable are those with the highest incomes. San Antonio and Austin show some of the highest correlations between capabilities and convenience and barriers. The convenience aspect could be attributed to the layout of these two cities, in that neighborhoods that are the most conducive to outdoor activities and healthy food choices are only available to higher socioeconomic classes. A recent study by the Pew Research Center further supports our findings in stating that “upper-income people in San Antonio are more likely to live among themselves than in any other major U.S. metropolitan area.”⁵ The strong barrier correlation in San Antonio and Austin demonstrates that people who are already limited due to health disabilities, depression, or fatigue are further restrained by their income and thus have some of the lowest capabilities for healthy behaviors. Overall this data provides physicians an explanation about some of the many factors affecting the health of their patients. It can be used to provide specific areas of focus when addressing a lifestyle change based on a patient’s city of residence and income.

References

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