**INTRODUCTION**

Obesity has reached epidemic proportions in urban youth. Poverty is known to be the single most reliable predictor of obesity in the United States. Yet, food awareness is another major correlate with obesity. Consequently, we designed a game to inform urban youth about the nutritional content of common food items. The game incorporated 100 randomly selected foods from the NDL/FNIC SR-25 Abridged Nutritional Facts database, which is composed of over 8000 food items and 53 macro- and micronutrients. It was predicted that students who played the game were more likely to score higher on a post-game assessment of nutrition than students who were merely told to memorize the content.

**METHODS**

Participants were recruited from the York College Research Pool, which is composed mainly of 18-year-old freshmen. Half of the participants were randomly assigned to play the game, which offered feedback, a reward/punishment system, and competition. The remaining participants were given a fact-based lesson on nutrition that included the same information as the experimental condition, but without game mechanics. In the game, subjects were asked to respond to challenges by preparing meals using the ingredients from the NDL/FNIC database. Challenges placed an emphasis on certain macronutrients to draw the students’ attention to the relationship between the food (e.g., “fish”) and the macronutrient (e.g., “protein”). Subjects participated in a post-experiment quit, where they estimated the macronutrient values (lipid, cholesterol, sodium, carbohydrates, and protein) for 20 randomly selected foods from the database. The game board, rules of the game, and data sheets are presented in Figures 1-3.

**RESULTS**

Data from score sheets were compared to the actual values for macronutrients from the SR-25 database. The absolute difference between the values was summed across all categories and subjects. 124 subjects participated in the experimental condition and 23 subjects participated in the control condition. The mean difference for the experimental group was 9.57 (SD=19.83) and the mean difference for the control group was 36.49 (SD=25.54). Nonparametric statistics revealed that the control group exhibited a larger error in the post-test than the experimental group, C=58.6, p=0.05.

**DISCUSSION**

Students who participated in the board game performed better on a post-treatment assessment of nutrition than students who only received nutrition fact cards. Most data from the game were used to inform the design of a digital game that was recently used to collect data from 100 freshmen at York College (Figures 4-5).

To reach a national audience, a mobile version of the game (Figure 6) was developed for iPad (Apple Computers, Cupertino, CA). Game assets were modified and several levels of increasing difficulty were created to encourage long-lasting engagement with the game and sustained practice with the content. We anticipate students who have experience with the game will perform better on post-treatment assessment compared to students who are only offered a text-based version of content.