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Believe it or not: Health education works

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Summary This study tested the effectiveness of a targeted intervention in the form of healthy food consumption education and discount coupons for healthy food. A field experiment was used to implement healthy food consumption education among low-income families in Alabama. In collaboration with the Sylacauga Alliance for Family Enhancement (SAFE), two grocery stores serving low-income families, interventions such as food consumption education and discount coupons for healthy food were tested. Results show that access to healthy food and education about healthy food consumption encouraged low-income families to purchase healthier food.

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1. Introduction

Obesity is a particular concern for developed, as well as many developing, countries. According to the U.S. Department of Health and Human Services, there are approximately 300,000 deaths in the U.S. each year due to obesity. Individuals with BMIs greater than 25 are at high risk for heart disease, high blood pressure, diabetes, cancer, sleep apnea, arthritis, pregnancy complications, and many other disorders [1]. Obesity is a rising concern among the rural and low-income populations in the U.S.

because this group has less access to healthy food and less knowledge about the potentially harmful effects of obesity; this is because they are more likely to lack access to education and have low incomes [2]. The World Health Organization estimated that in 2014, there were more than 1.9 billion overweight persons around the globe and more than 600 million adults with obesity [3]. Obesity is a risk factor for many diseases, like heart disease, type 2 diabetes, respiratory illnesses, and certain types of cancer, so policy makers are interested in mitigating the growth and prevalence of obesity. With obesity rates increasing across the globe, researchers Powell and Chaloupka [4], Powell et al. [5], Waterlander et al. [6], Jou and Techakehakij [7] and Finkelstein et al. [8] explain

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that sugar-sweetened beverage taxes (SSB taxes) are a popular tool for not only reducing obesity rates, but also for generating revenue. SSB taxes vary in effectiveness between countries.

To lower sugar consumption rates, policy makers have enacted excise taxes on producers, wholesalers, and distributors; they aim to improve health outcomes just as alcohol and tobacco taxes have done. Like those “sin taxes” imposed on tobacco and alcohol, the SSB taxes are considered efficient, as they not only mitigate the negative health implications of soft drink consumption, but also generate large amounts of revenue for the public sector. The degree to which these taxes disincentivize consumption is based on the price elasticity of demand (PED) of sugary drinks. Andreyeva et al. [9] estimated that the absolute value of the PED is less than 1, roughly 0.79. This value is high relative to other items like cereal (0.60), milk (0.59), and vegetables (0.58). Brownell et al. [10] show the importance of a tax on 20-ounce soft drinks and report that a tax of 1 cent per ounce of beverage would increase the cost of a 20-ounce soft drink by 15%–20%. Their result depicts that the price elasticity of demand for soft drinks is -0.8 to -1.0 . While these studies are important in showing the effect of taxes, mitigating obesity and health concerns through a tax is not a viable, helpful solution for low-resource families: effective policy change that leads to a significant behavioural changes in food consumption could be more effective.

It has been shown that taxes on sugary beverages and additional taxes on unhealthy food items exhibit small effects on obesity. These taxes could penalize consumers, but they do not affect consumers’ basic knowledge about food or their consumption behaviours [11–13]. Unhealthy food consumption depends on consumption habits, preferences towards different food items, and affordability for the consumer. Therefore, these taxes are not always effective in mitigating obesity [14].

This literature also shows the importance of healthy eating education in changing food consumption decisions, but we need more focused studies on low-income populations because these consumers differ significantly from high-income consumers in terms of their food consumption decisions [15,16]. In this paper, we test the influence of an educational intervention on food purchasing behaviours for low-resource families. We used Talladega County in Alabama as our study site. Alabama is facing a severe obesity problem, as identified by a report from the Trust for America’s Health (TFAH) and the Robert Wood Johnson Foundation (RWJF) [17]. Alabama’s adult obe-

sity rate is 32.4% overall; it is 41.8% among the African–American population. In this research, we used a behavioural experiment to test the effect of interventions — such as education about healthy food consumption and healthy meal preparation, access to healthy food, and healthy food coupons — on food purchase decisions of low-income families. Rural low-income Alabama residents may benefit from targeted interventions because these policies do not increase the cost of food, and they offer the potential to encourage healthy food consumption. We collaborated with Sylacauga Alliance for Family Enhancement (SAFE) to directly engage with 100 low-resource families from Talladega County.

2. Method

2.1. Experimental design and procedures

After receiving Auburn University’s Human Research Protection Programs’ approval, we prepared educational materials related to healthy food consumption, healthy meal preparation sessions, and demographic information surveys. Healthy eating educational materials were prepared following the Dietary Guidelines to Americans, 2015–2020 edition [18,21]. This document provides facts about nutrition and physical activity related to healthy lifestyles in the United States. As described in the Dietary Guidelines to Americans, 2015–2020, it is important to check calorie limits and increase physical exercise to mitigate obesity. It is highly recommended that an individual consume less than 10% of his/her calories per day from added sugars, consume less than 10% of calories per day from saturated fats, and consume less than 2300 mg per day of sodium. The guidelines recommend eating more fruits and vegetables, low-fat dairy products, proteins (like lean cuts of meat, lean ground red meat, lower fat cooking method, more fish, beans, nuts to the diet), unsalted walnuts, fat-free milk, and whole grain bread. We included this information in a graphical flyer and video presentations.

We also collaborated with Auburn University’s cooperative extension (AUES) system and prepared a healthy cooking demonstration following the Supplemental Nutrition Assistance Program-Education (SNAP-Ed) in Alabama. Alabama SNAP-Ed is committed to reducing obesity among Alabama citizens. SNAP-Ed in Alabama employs 32 nutrition educators. SNAP-Ed in Alabama provides adequate training and resources to these 32 nutrition educators who helped with the cooking classes.

In collaboration with SAFE, which works with rural families in Alabama, we contacted two local

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