

# Foods and Beverages Available at SNAP-Authorized Drugstores in Sections of North Carolina

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## ABSTRACT

**Objective:** To assess healthy food availability in *Supplemental Nutrition Assistance Program*–authorized drugstores by store chain and neighborhood income level in 3 regions of North Carolina.

**Design:** Cross-sectional, descriptive study.

**Setting:** Twenty-five counties in North Carolina.

**Participants:** A total of 108 drugstores (36 CVS Health, 36 Rite Aid, and 36 Walgreens).

**Main Outcome Measure(s):** Fifty foods and beverages offered at drugstores, categorized as healthier and less healthy.

**Analysis:** Kruskal-Wallis tests were used to test differences in the availability of foods and beverages by chain and neighborhood income.

**Results:** Of the 50 foods/beverages observed, 11 were available at all drugstores. Three of the 36 (8%) healthier items were available at all stores (100% fruit juice, water, and high-fiber cereal) whereas 8 of the 14 less healthy items (57%) were available at all stores (chips, sports drinks, energy drinks, regular soda, diet soda, sugar-sweetened beverages, beer, and wine). Only 3% of drugstores offered fresh vegetables and 4% offered fresh fruits. Less than 20% offered frozen chicken or beef. For 36 healthier foods, 11 differed by chain (28%); for less healthy foods 2 of 14 differed by chain (7%). Foods and beverages offered did not vary by neighborhood income.

**Conclusions and Implications:** Although drugstores offer some healthier items, few offer fresh produce. As the drugstore industry changes, it is important for the nutrition community to study the impact of these changes on food purchasing behavior and ultimately health.

**Key Words:** SNAP-authorized stores, drugstores, pharmacy, food access, vegetables, fruit (*J Nutr Educ Behav.* 2017;49:674–683.)

Accepted May 24, 2017.

## INTRODUCTION

Neighborhood food access can influence dietary intake, obesity, and other chronic disease risk.<sup>1</sup> In addition to traditional food retailers such as supermarkets and supercenters, which accounted for approximately 70% of the

market share of food sales in 2014, many Americans purchase food from nontraditional food retailers such as convenience stores, dollar stores, and drugstores. In 2014, drugstores accounted for 5.2% of food sales<sup>2</sup> and 3 of the major chains (CVS, Walgreens, and Rite Aid) were ranked fifth,

eighth, and 30th, respectively, on *Supermarket News's* top grocery retailers of 2015.<sup>3</sup>

Drugstores, which the US Department of Agriculture (USDA) categorizes as selling a wide variety of merchandise with <50% of their sales coming from food, may offer food and beverage items at prices that are similar to traditional stores<sup>4</sup> and more health-oriented products and environments. For example, the drugstore chain CVS changed its name to CVS Health, introduced a MinuteClinic, discontinued tobacco product sales, and in December, 2015, purchased Target's in-store drugstores.<sup>5–8</sup>

For individuals with limited incomes, food access increased at drugstores because many drugstores are *Supplemental Nutrition Assistance Program* (SNAP) authorized. The SNAP provides in-kind food benefits to low-income participants with an electronic card that is used to buy food

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*Conflict of Interest Disclosure:* The authors' conflict of interest disclosures can be found online with this article on [www.jneb.org](http://www.jneb.org).

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<http://dx.doi.org/10.1016/j.jneb.2017.05.360>

and beverages at SNAP-authorized outlets.<sup>9</sup> Recent research found that SNAP recipients, who tend to live in lower-income neighborhoods, have greater geographic access to smaller SNAP-authorized stores such as convenience stores, dollar stores, and drugstores, compared with larger food stores such as grocery stores.<sup>10,11</sup> In the US, a total of 19,741 major chain drugstores accept SNAP. In North Carolina, the setting for the current research, the number of drugstores authorized to accept SNAP increased from 7 stores in 2000 to 796 stores in 2015.<sup>12</sup> Some drugstores in North Carolina are authorized to accept *Special Supplemental Nutrition Program for Women, Infants, and Children* vouchers for infant formula: 255 CVS Health, 19 Walgreens, and 2 Rite Aid stores. None of the drugstores in North Carolina accept *Special Supplemental Nutrition Program for Women, Infants, and Children* vouchers for food and non-formula beverage vouchers.

Dietary behavior is complex and results from an interplay of multiple influences across different contexts; this study employed an ecological framework to assess the food environment of SNAP-authorized drugstores.<sup>13</sup> The ecological framework considered individual-level factors in relation to the social environment, physical environment, and macrolevel environment. Individual factors pertained to cognition, behavior, and demographics.<sup>13</sup> The social environment included interactions with family, friends, and peers. The physical environment included multiple settings in which people ate or procured food. The physical environment, which was the focus of this study, was particularly important because physical settings within a community can either create or hinder opportunities for healthy eating. The macrolevel environment referred to factors that operated within the larger society but had a powerful effect on what people eat, such as food marketing, food production and distribution systems, and price structures. Collectively, these environments influence what food choices people make, and where and how much they eat.<sup>13</sup>

For Americans to improve their diets and health, they need to have supportive environments and access to high-quality and affordable healthy

foods in environments where they live, work, learn, and play.<sup>14</sup> A large body of evidence over the past 2 decades documents that accessing affordable, high-quality, and healthy food is a challenge for many households and is most pronounced in low-income neighborhoods with a high proportion of racial/ethnic minorities, as well as in rural areas.<sup>1,15,16</sup> Numerous studies documented disparities in access to supermarkets and grocery stores in these settings.<sup>1,17-20</sup> Several studies also showed that small stores such as corner stores, convenience stores, gas station stores, bodegas, or *tiendas* in low-income communities of color and rural neighborhoods often have limited healthy food options.<sup>1,15,21,22</sup>

Two studies explored the availability of healthy foods and beverages offered at drugstores. One study, by Caspi et al,<sup>23</sup> examined the availability of 13 healthy food and beverage items offered in small food retailers, including 13 drugstores. Among those drugstores, 23% sold fresh fruits and vegetables, 54% sold 100% fruit juice, 77% sold whole-wheat bread, and none sold brown rice or frozen fruits or vegetables. Another study by Whitehouse et al<sup>24</sup> examined the availability of snack foods within 10 ft of the checkout area in food stores located in the health care environment (ie, community health clinics, hospital shops, and drugstores). The authors found that compared with other types of food stores in the health care environment, drugstores were highly likely to offer energy-dense foods: 96% of drugstores offered snack foods, 90% offered candy, and 89% offered sweetened beverages within 10 ft of the checkout.

Given that there are close to 800 SNAP-authorized drugstores in North Carolina that operate in a variety of neighborhoods, including low-income neighborhoods where more SNAP recipients live, the increase in the availability of food and beverages at drugstores is strongly relevant to increasing access to healthy foods. The purpose of the current study was to assess the availability and types of foods and beverages offered in a sample of major chain SNAP-authorized drugstores in 3 regions of North Carolina. The authors hypothesized that the foods and beverages available at drugstores varied by (1) major chain and (2) in-

come level of the neighborhood/census tract of the store (referred to here as neighborhood income).

## METHODS

### Sample Selection and Characteristics

The research area was 25 counties in North Carolina, including Asheville, Charlotte, and Durham and their surrounding counties (referred to here as the research area). This research area was home to 47% of the North Carolina population. Specifically, the population in the Asheville region was approximately 786,000, the Charlotte region was 1,941,000, and the Durham region was 1,945,000. The counties surrounding Asheville were rural whereas the counties surrounding the cities of Charlotte and Durham were a mix of urban, suburban, and rural. The University of North Carolina at Charlotte institutional review board determined that this research did not require review because it was not human subjects research.

Four data sources were used for this study. First, a list of all SNAP-authorized drugstores in 25 counties of North Carolina was downloaded in May, 2015 from the USDA SNAP Retailer Locator website.<sup>12</sup> Second, US Census American Community Survey 2009–2013<sup>25</sup> data were used to understand the demographic characteristics of the research area and the drugstore census tracts. Third, USDA Food Access Research Atlas<sup>26</sup> data were used to indicate which drugstores were in food deserts. Finally, trained data collectors visited 108 drugstores throughout the research area and completed a food environment inventory worksheet that assessed the variety of foods and beverages available.

More than a quarter of the drugstores in the research area were selected for observation (108 of 390). To obtain a good understanding of the items of interest available at each of the 4 major chains, the researchers observed a total of 36 drugstores from each chain. To ensure that there was equal representation of drugstores sampled from low, middle, and high-income areas, 12 drugstores/chain were observed from each income category. The [Figure](#) outlines the number of drugstores by chain and income area. To make sure that the sample represented

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