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A mixed methods assessment of the barriers and readiness for meeting the SNAP depth of stock requirements in Baltimore's small food stores

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Abstract

We sought to understand Baltimore corner store owners' awareness of and readiness for the then-approved Supplemental Nutrition Assistance Program depth of stock requirements and assess potential barriers and solutions. In-depth interviews and stocking observations were conducted in 17 corner stores in low-income food deserts of Baltimore City. Corner store owners conveyed little to no awareness of the pending depth of stock changes. Only two stores were currently ready for the requirements. Low customer demand, high amounts of potential spoilage, and unfair pricing at the wholesaler were identified by store owners as barriers to stocking required foods.

Keywords

Corner stores; food assistance; food deserts; mixed methods; urban

Introduction

In December 2016, Congress reauthorized the 2014 Farm Bill. One of the aspects of the rule asked the United States Department of Agriculture (USDA) to update their stocking standards to increase the “depth of stock” of staple foods at stores that accept benefits from the Supplemental Nutrition Assistance Program (SNAP). Specifically, the new requirements mandated that SNAP authorized retail food stores: (1) have a mandatory minimum of at least seven (increased from three) varieties of items in each of four staple food categories available on a continual basis; (2) stock at least three units of each variety on a continuous basis; and (3) ensure that at least three of the staple food categories contain perishable varieties (table 1) (Enhancing Retailer Standards in the SNAP; SNAP Provisions of the Agricultural Act of 2014 Sect. 4002; Enhancing Retailer Standards in the SNAP 7 CFR Parts 271 and 278).

A purpose of increasing the “depth of stock” of these staple foods is to increase access in low-income food desert neighborhoods. Nearly 10% of the U.S. population lives in a low-income area more than a mile from a supermarket (Ver Ploeg 2012). One in four Baltimore residents live in a food desert, and nearly a third of residents receive SNAP benefits (Franco et al. 2008). Small independently owned food stores known as “corner stores” are ubiquitous in these residential areas and primarily sell sugar-sweetened beverages and packaged foods high in fat, sodium, and sugar (Borradaile et al. 2009; D’Angelo et al. 2011). Furthermore, the unhealthiest food environments in Baltimore with limited access to healthy foods and abundant unhealthy food outlets are located in areas with high proportions of low-income African-American residents (Hager et al. 2016). These food environments are particularly concerning as they are associated with high rates of noncommunicable diseases (Drewnowski et al. 2012; Morland, Roux, and Wing 2006).

It is important that small corner stores in low-income areas can accept SNAP benefits to be able to support these communities. However, 12.6% of retailers in the United States that were reviewed had issues of compliance with SNAP in 2014, resulting in loss of their privileges, where 60% of these were small stores (SNAP Retailer Management Annual Report 2014). Reasons for noncompliance included trafficking of benefits and improperly following program requirements. There is considerable literature on general SNAP compliance from the USDA, but little of this work has been centered on store owners and the challenges they face following the program requirements.

What is not fully understood is the level of readiness of small stores for these depth of stock requirements that would require (in some cases) substantial sourcing and structural changes. These changes to the SNAP program could offer a great benefit to Baltimore food desert communities by greatly increasing the number of staple foods available in commonly used small food stores. However, it could also be a great detriment if the >90% of corner stores in Baltimore that accept SNAP lose their privileges and eventually close, decreasing food access in its poorest neighborhoods.

We sought to explore the potential impact of these requirements on small food stores by conducting a mixed methods study in Baltimore City, Maryland. If this rule becomes effective, stores will then have a 1-year grace period to comply with the new SNAP requirements. It is imperative that the issues of complying with requirements like the new depth of stock should be examined, with a focus on easing the transition. We focused on answering the following questions:

1. How aware are Baltimore small store owners of the new depth of stock changes?
2. What is their current level of readiness for these changes?
3. What do small store owners describe as the barriers to implementing these new depth of stock changes?

Materials and methods

A mixed methods approach was used for the data collection and analysis of this study, which include in-depth interviews and direct structured observations.

Setting

As of 2016, there were 633 corner stores in Baltimore City, where 77% of stores accept SNAP (Johns Hopkins Center for a Livable Future 2016). Stores mainly source their products from one wholesaler.

Recruitment and sampling of study population

This research took place in Baltimore City between August and December 2016, immediately prior to the finalization of the depth of stock requirement. Data were collected in 17 corner stores that were located in 15 low-income areas previously identified as food deserts.

Sampling of small store owners used an emergent design. In the first phase, stores were recruited from a list of previous partners in corner store research. Many corner stores previously participated in other interviews, surveys, and stocking assessments in different projects with the research team and the local Baltimore health department (Gittelsohn et al. 2014b; Gittelsohn et al. 2010; Baltimore-Healthy Stores 2017). From these corner stores, a list was created that included corner stores that had not been previously part of a healthy food stocking intervention. There were other stores that were found through a list of all the corner stores in Baltimore City from the Center for a Livable Future at Johns Hopkins (Johns Hopkins Center for a Livable Future 2016). From these lists, a convenience sample was taken for the first seven stores. After several interviews where the store owners relayed varying levels of confidence with the proposed changes, the second phase of recruitment focused on purposively sampling seven small corner stores with limited storage capabilities to understand how that would affect store owners' responses. The final phase targeted three large corner stores that were classified as having a high Healthy Food Availability Index (HFAI) score and focused on how the business practices of larger stores that are already successfully following the requirements differ from smaller stores (Johns Hopkins Center for a Livable Future 2016). The sample of 17 stores was considered sufficient after saturation with the store owner's responses was met (Cho and Lee 2014). Characteristics of sampled corner stores and respondents can be found in table 2.

In-depth interviews

Semistructured in-depth interviews were carried out with 17 owners or managers of corner stores. The interview guide addressed (1) store owners' general awareness that the SNAP policies were changing; (2) ways the SNAP program has communicated with them in the past and their feelings about how communication can improve in the future; (3) different factors they perceive as barriers for implementing the requirements in their store; (4) different factors that would facilitate successful implementation of the requirements; (5) current readiness; and (6) solutions that can be implemented in corner stores, neighborhoods, wholesalers, and the policy itself. Respondents were asked general questions about stocking habits and SNAP participation and were then taught the requirements of the policy using a tip sheet that described current SNAP requirements, proposed SNAP requirements (which at the time demanded stocking six items per category), reasons why the requirements were changing, and the consequences for not complying. They were then asked

to reflect and respond with their feelings about how this policy could be implemented in their store.

Interviews were conducted inside the stores the respondents worked in. All research participants gave oral informed consent prior to any data collection and interviews were recorded only with the informants' permission. Fourteen interviews were audio recorded using both a digital recorder and cell phone application as precaution. Recordings were transcribed verbatim by other members of the study team. Three store owners refused to be recorded. Detailed notes were taken during these interviews and later expanded into detailed transcripts.

Thirteen of the interviews were conducted by a graduate public health student (AR) with previous experience and training in qualitative research. This data collector had previously worked with corner stores, including a number of the store owners interviewed. Additional data collectors were trained in in-depth interview methods by an experienced professor on the subject and were chosen based on their willingness to commit large amounts of time to the project. Data collectors were observed conducting an in-depth interview with a corner store owner by the original interviewer before performing interviews on their own.

Stocking observation

A stocking assessment was conducted at the same time as the interview and was intended to show current readiness for the requirements. The stocking assessment represented the four SNAP staple food categories (dairy, proteins, fruits and vegetables, grains) and data collectors walked around the store and wrote down qualifying items that were stocked (per the proposed depth of stock requirements), such as bread, milk, and vegetables, the quantity of each item stocked, and whether the items were fresh, frozen, or canned.

Analysis

Initial coding was performed by a single coder reading through each transcript and identifying broad themes that were used as code families. Subsequent rounds of analytical coding led to the creation of codes and subcodes within these themes. The codebook was then used to code a transcript by two data collectors and were compared and used to revise the definitions used. The process resulted in a codebook with six families with an average of 4 codes in each for a total of 25 codes. In-depth interview transcripts were analyzed line-by-line by a single coder using ATLAS.ti (Berlin).

Stocking assessments were analyzed by counting the number of items in each staple food category that had three or more items stocked, and how many of those categories had perishable items. This was meant to represent how the SNAP program will eventually analyze the stocking of each store for the new policy.

Results

Awareness of changes

Most store owners (14/17) interviewed were completely unaware of SNAP's intentions to change the requirements. The other three store owners were aware of the pending

requirements because of communications from community organizations. However, no store owners were aware that SNAP had current stocking requirements, and none were able to describe the current program conditions for keeping their privileges.

Observed readiness

Only 2 out of 17 stores examined met all categories for the new depth of stock requirements (table 3). By category, readiness ranged from moderate to low, with most stores meeting the requirement for fruits and vegetables and almost none meeting the requirement for dairy. Stores were more likely to meet the fruits and vegetables requirement if they stocked a large variety of canned vegetables.

Self-reported readiness for changes

Confidence

In general, most store owners said they were very confident with the idea of stocking the required products because they perceived that they already had all of the products required or could easily get them.

I: How confident are you that you would be able to implement these changes?

R: Very confident. Matter of fact, we already have this so. It, it, it won't have to make that much of an adjustment. (African-American store owner, larger store, did not meet new requirements)

However, they were not confident with stocking fresh meats because they have short expiration dates and people would not expect to get meat from a corner store.

Perceived benefits

Store owners said that the main benefit of this policy was that it would offer more choices for the customers so they could lead a healthier lifestyle. On the other hand, most store owners said they saw no benefit to this policy for them or their business.

Several store owners were concerned about SNAP trafficking and the increasing number of corner stores doing “fake business” around the city. This may refer to tobacco shops that also sell small snacks such as candy bars, or food stores that illegally redeem their customer's benefits in exchange for cash (or “cashing food stamps”). Respondents believed that stores like these take away customers from them and they were in favor of this policy because they hoped the inspections that come with the stricter stocking changes would catch these stores that are not following the rules set by SNAP.

I am in favor of this policy because it's gonna get rid of all them fake businesses that just come to the city through couple can sodas, two random chips, apply for SNAP benefits and they usually don't sell anything, just cash food stamps which is actually ... do not help, like, business owners like us who are trying to do legitimate business. (Middle Eastern store owner, smaller store, did not meet new requirements)

Facilitators

Among larger corner stores, space and population demand were strong facilitators for implementing the changes. Stores with large amounts of shelf space were more likely to report no issues with stocking the required foods. Several stores were located near customer bases that already consistently asked for a wide range of staple food items. For example, one store was located next to a retirement home where the residents consistently demand fresh meats. One larger store owner described the difference between his store and a smaller store,

I guess it would be the space. The space and the location as well ... Because in this location there are more neighbors that would come in and get what they need. But compared to like if you live closer to another larger convenience store then it would harder to do, and it won't be as well off if you have to keep this kind of criteria.
(Chinese store owner, did not meet new requirements)

Barriers to complying with changes

Low consumer demand and corner store expectations

Perceived consumer demand strongly influenced store owner confidence to implement these changes. Store owners said the main reasons for stocking something in their store were customer demand and “what people usually buy.” They believe that their customers simply do not want these “healthier” staple foods and it defies the idea of what a corner store is in the community.

People don't expect more from us you know .... You not going to look for something which is out of the range of ... convenience store .... Like if you want to buy a whole lot \$200 worth of grocery you're not going to come here .... you're going to come here for when you need a soda or you know something in emergency like you need bottle of ketchup. (African-American store owner II, smaller store, did not meet new requirements)

They expressed concern that if the policy were to impose stocking items that are not necessarily appropriate for the population context, it would impose a burden on the store owner because they would need to continually stock products that do not sell. For example, when asked about the possibility of stocking plant-based milk as a variety of dairy in his store, an African-American store owner said,

Almond milk? The number don't support it. Even if I buy it and shove it in their face, it's not going to support it because everybody don't want that, they want the regular milk. (Smaller store, did not meet new requirements)

However, stores in areas that had a consistent number of people asking for staple and perishable foods did not express these concerns.

The idea of what a corner store usually stocks was another theme that emerged because store owners were afraid of going into competition with larger grocery stores when they are forced to stock staple foods. They felt that customers would not be willing to buy staple foods in a corner store because they can buy them at the grocery store at a better price and higher quality.

Potential spoilage

Store owners took pride in stocking the freshest items possible in their store, which means frequent trips to the wholesaler and constantly throwing out old product. They were afraid that the policy would worsen this cycle because they would be forced to stock six items of a product that doesn't sell well at all times. They did not like this idea because they go to the wholesaler frequently and consistently stock their shelves.

But if they force it upon me it's just going to be me waste, throwing money away and also because if forced upon me, most of this stuff are perishables items, they have a shelf life. So you put a gun to my head to sell it, it's not selling, you know? Like for the milk, I'm not going to buy ... I'm not going to buy 6 gallons a week because it's not that I don't sell that much but I buy milk 3, 4 times a week. I prefer that because the date – see if I buy it today and sell it tomorrow, I don't have a problem going back tomorrow and buying 4 more because I want the fresh milk. (African-American store owner, smaller store, did not meet new requirements)

Stocking issues

A big issue with sourcing staple foods in corner stores was wholesale prices. Store owners felt that prices offered at the wholesaler were too high for storeowners to resell and make a decent profit while still maintaining a fair price for their customers.

Working with the Wholesaler1 is the worst thing in the world to do. Number one, they're too pricy. Number two, they don't care as long as they sell their product .... You go to Store1 and you buy it. Yeah, it costs more sometimes, depends on it. But you have more options. Like the orange that we bought. We just bought some orange, And Wholesaler1 “man you know how much this is for a bag? They were like 15 dollars.” Fifteen dollars, something like that. What I do, I went away. (Korean-American store owner, larger store, did not meet new requirements)

Some store owners were worried about the idea of needing six units of each item (per the proposed requirements) stocked at all times. They were worried about a customer coming in and suddenly buying four of the units they have stocked and then being checked by a SNAP agent.

Lack of storage

All the store owners had refrigerator space they could devote to staple food items. However, several store owners mentioned the impossibility of carrying frozen foods because they do not have a freezer. Three smaller store owners said they just did not have the shelf space to put the required food items.

Solutions

Communication

Korean store owners were worried about communication from SNAP not being in Korean and they won't be able to understand it,

Most people who accept SNAP, I would say a good 40% doesn't speak or read or write English, and that is the problem. So how you reach out to like, in the past variable corner store owners are Korean ... now ... changing to Arabic, then Spanish, now black ... so how do you communicate to all them because believe me, most of those people living like the first generation, they don't speak the language or they do speak but they don't read or write. (Korean-American store owner II, larger store, currently met new requirements)

To address the diversity of corner store owners, owners conveyed that SNAP should offer their materials and resources in different languages. Making the message clear and concise without "business language" that clearly states what the changes are, what counts, and what does not count was the best way for store owners to receive information about the changes. Respondents were also concerned that a lot of store owners are older and communication channels like email would not work unless they had somebody to help them. Sending letters in the mail was considered the best form of communication rather than phone calls or visits because it is not disruptive, is easy to organize for future reference, and gives non-English-speaking store owners the opportunity to have it translated.

Discussion

This is the first study to consider the challenges small independent store owners could potentially have with implementing large depth of stock changes with the SNAP program. We found that most store owners were unaware of SNAP's intentions to change stocking requirements. This lack of awareness and communication from the SNAP program is a threat to readiness. These findings are similar to what was found when the WIC program changed their requirements in 2009 (Gittelsohn et al. 2012). The corner store owners that were interviewed were mostly confident they could implement these changes in their store, even though observed readiness through the stocking assessments show that they were unprepared. This may indicate a lack of understanding of what the requirements truly demand or a lack of perspective of how difficult it might be to source and stock these products.

Store owners said the main barriers to implementing the new standards were low customer demand, high amounts of potential spoilage, and unfair pricing at the wholesaler. These concerns have been found to some degree in previous interviews with corner store owners [Kim et al. 2017; Gittelsohn et al. 2008; O'Malley et al. 2013]. All of these barriers would potentially create a financial burden for the store owners because they would be stuck stocking products that will not be sold. This would be detrimental because they will simply lose profits or it would cause them to lose their SNAP privileges if they do not follow the requirements.

These findings illuminate larger issues in the wider food environment on the consumer and wholesaler levels that need to be considered when creating food policies in the future. Interventions with local wholesalers to lower their prices on staple food items could make it more financially feasible for store owners to offer more competitive prices to their customers and offset profit losses from spoilage. Store owners perceive the benefits of the policy as

providing greater access to healthy foods for the community, but they are concerned about the preferences of the surrounding community and if customers will actually buy these foods. A fundamental issue that emerged from this study is how can demand generation be increased so people will be motivated to patronize stores for these staple foods? A community makes a corner store go into business or go out of business, and increasing the supply of staple foods in stores will not necessarily increase the demand (Gittelsohn et al. 2014a; Caspi, Lenk, and Pelletier et al. 2017). Having a consistent customer base that would buy the perishable foods in the corner stores would alleviate much of the stocking pressures. Leung et al. found that SNAP participants were supportive of increasing nutrition education and incentivizing healthful foods, which would be helpful for increasing customer demand in small stores (Leung et al. 2017). Other suggestions include activities to enhance communication between customers and store owners, to communicate presence of a demand for healthier options to store owners and ensure a sustainable relationship of supply and demand (Gittelsohn et al. 2008; Kim et al. 2017; Song et al. 2012). However, there are many issues such as pricing that need to be overcome in order to keep this sustainable (Caspi, Pelletier, and Harnack et al. 2017; Zachary et al. 2013).

Since the new requirement was approved in December 2016, the federal government approved a new federal budget that includes language that indefinitely delays implementation of the depth of stock changes until the USDA reopens the rule to redefine the term “variety” (U.S. Text of the House Amendment to Senate Amendment Numbered 1 to H.R. 244). With this, the USDA will need to redefine what counts as a variety in each food category so that more foods will be allowable as a staple food. It can be assumed these new revisions were created to help businesses successfully comply with the SNAP requirements. However, it is unclear whether small store owners’ perspectives were considered or how this may impact public health and nutritional access of residents of food deserts. This leniency could make it easier for corner stores to be in compliance with the new requirements because they could use mixed foods (such as pizzas or pies) that they may already stock to meet the requirements. Since the new approved requirement already allowed mixed foods as a variety, this revision would allow even more foods to be acceptable in each of the four staple food categories. This would undermine the original purpose of the depth of stock changes. As most store owners in this study felt they could successfully implement the proposed requirements, it highlights how there is no need to redefine the term “variety” so that more foods will be allowable as a staple food for store owners to successfully comply with a staple food mandate. Instead, it should be considered how factors in other levels of the food environment (such as wholesalers and customers) may impede the ability of small independently owned stores to comply with future revisions to SNAP policy.

If depth of stock changes are proposed in the future, revisions to the previously proposed guidelines should be made to improve outcomes for small store owners. For instance, required stocking units could be made proportional to the size of the store, so smaller stores can carry less products than larger ones. This would reduce the burden for small stores, which have limited storage capabilities. In addition, the USDA should consider more effective forms of communication so all food store owners can fully understand any changes to the SNAP program. To address the diversity of corner store owners, the USDA should offer their materials and resources in different languages. Making the message clear and

concise without “business language” that clearly states what the changes are, what counts, and what does not count would help store owners to better understand the changes. There is currently no available information about the USDA’s procedures for verifying that stores are properly stocking the program requirements. In addition to increasing the effectiveness of their communications, the USDA should also make their verification procedures more transparent. Store owners and community organizations that may assist in implementation of these requirements should have a clear understanding of how the USDA will choose stores to be checked and how their stocking will be verified, including how they will count and what factors they are looking for in proper varieties and units, so that they will be able to effectively assess how they are complying with the requirements.

This study had several limitations. Corner stores were not randomly sampled. However, emergent design allowed us to purposively select many different perspectives and gain diversity that might have been missed otherwise. In addition, the sample was restricted to low-income areas, which are the most likely to experience food access issues in Baltimore. The sample size was small (17 stores out of nearly 440 that accept SNAP). Generalizations about the readiness of all independently owned food stores in Baltimore for the SNAP changes are not easily made with so few observations. Even though this study is based on a small sample of store owners, the use of mixed methods allowed us to explore the opinions of the store owners about the SNAP requirements and validate what they are saying with direct structured observations of their stocking. Quotations were used to illustrate corner store owner perspectives and to strengthen the conclusions made with the help of the stocking data. The one-time stocking observation instrument was designed to capture stocking at the time of the in-depth interview. A limitation of the data collection period is that it spanned over 4 months, which could influence type and quantity of foods that were captured. Future observations should be done within a shorter time frame and/or extended for multiple measurements. In addition, the instrument was developed with the assumption that the final ruling would demand no mixed foods. Mixed foods were not included in the observations, which may undercount the proportion of stores meeting the requirement. The characteristics shown in table 2 are the only information collected about the stores and their owners, and no information was provided by the SNAP program about their status. The same person conducted most of the interviews, developed the codebook, and coded the transcripts. Although the task of creating the codebook and coding was put on one person, strategies were developed with the advice and direction of several members of the study team. We interpreted having one person conduct the analysis as a strength as it provided consistency in the interpretation of the results and made it so coders who were not present at the interview did not gloss over important points that may have been emphasized. Another strength of the study was the previous relationship the interviewer (AR) had with store owners that could have made them feel more comfortable and allowed them to go into more depth about more privileged information, such as their personal business practices and feelings about the SNAP program.

Conclusions

In conclusion, lack of awareness and readiness among small store owners is an important concern as the new depth of stock requirements are potentially implemented over the 1-year

grace period. Thoughtful consideration should be made for the barriers small store owners will face when developing and implementing similar large food stocking policies in the future. The consequences of not doing so will most likely greatly reduce food access in many low-income food desert areas and worsen already high chronic disease rates. Moving forward, Baltimore City should consider programs that support stores in sourcing products in a business-friendly manner.

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Table 1.

Descriptions of the Proposed, Final, and Revised USDA SNAP Depth of Stock Requirements.

Version of ruling	Number of varieties ^a required	Number of units ^b of each variety required	Total items required ^c	Mandate for perishable varieties?	Mixed foods allowed?
Previous requirements (as of 2014)	3	1	12	2 categories	Yes
Proposed	7	6	168	3 categories	No
New/approved (as of December 2016)	7	3	84	3 categories	Yes

^aVarieties are defined by the product kind or main ingredient. For example, apples, oranges, and carrots represent discrete varieties of fruits and vegetables. Different types of food items can fall into the same category based on the main ingredient (USDA 2016). For example, a store that has both fresh carrots and frozen carrots has one variety of vegetables.

^bUnits are the number of items to be stocked for each variety. A store that has two packs of fresh carrots, one pack of frozen carrots, and three cans of carrots has six units of one variety of vegetable altogether.

^cNumber of varieties required $\times$ number of units for each variety required $\times$ the number of staple food categories (4) = total items required. The staple food categories are fruits and vegetables; meat, poultry, and fish; dairy; and bread or cereal.

Table 2.

Characteristics of Sampled Baltimore Corner Stores and Respondents ($n = 17$).

Store characteristic	No.
Store size ^a	
Smaller than 350 sq. feet	7
Larger than 350 sq. feet	10
Store owner ethnicity	
Indian	4
Middle Eastern	3
Korean	3
African-American	3
White	2
Chinese	1
Hispanic	1
Store owner gender	
Male	12
Female	5
Healthy Food Availability Index ^b	
HFAI <10 ^c	6
HFAI ≥ 10	10

^aThe cutoff of 350 sq. feet was the average size of all the stores interviewed.

^bHFAI are collected by the Center for a Livable Future and is a calculated score that determines the number of healthy foods available at a store. Scores are out of a possible 28.5.

^cOne store was missing an HFAI score.

Table 3.

Sampled Baltimore Corner Stores Currently Meeting the New Approved and Previous Depth of Stock Requirements.

Depth of stock category	# meeting new/approved requirement (<i>n</i> = 17)	# meeting old/previous requirement (<i>n</i> = 17)
Fruits and vegetables	12	17
Proteins	7	17
Grains	5	16
Dairy	3	16
All categories combined ^a	2	16

^aFoods qualified for the category if they were canned, frozen, or fresh and did not contain “mixed” ingredients. Stores met new depth of stock requirements if they had at least seven varieties with at least three units stocked in each category. Of the four categories, at least three needed to have a perishable item.