

Rural corner store owners' perceptions of stocking healthier foods in response to proposed SNAP retailer rule changes

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ABSTRACT

Purpose: To better understand rural corner store owners' perceptions about the then proposed U.S. Department of Agriculture's (USDA) Supplemental Nutrition Assistance Program (SNAP) Retailer Rule.

Methods: We conducted 32 interviews with rural corner store owners across six states in response to USDA's proposed rule. We asked owners about potential barriers to and facilitators of stocking healthier foods.

Findings: Among the interviews, there were six main themes discussed: (1) SNAP Retailer Rule definition concerns; (2) challenges to implementation; (3) facilitators to implementation; (4) perceptions of SNAP customers; (5) benefits of being a participating retailer in SNAP; and (6) concerns about the threat to the store's economic viability if required to carry additional healthier items in line with the proposed rule.

Conclusions: Rural corner stores need help promoting healthier food options, appropriately handling perishable items, finding suppliers that can adhere to their food delivery requirements, and maintaining their SNAP retailer license. Recognizing the implementation challenges of stocking healthier foods for corner stores and presenting feasible solutions to them can improve the likelihood of successful passages of healthy food access policies and programs. Future policies or programs focusing on stocking healthier foods should take into consideration rural corner stores' unique geographic landscape and business practices.

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1. Introduction

Adequate nutrition is essential for health throughout the lifespan (USDA, 2005), but the ability to maintain a healthy diet is contingent on availability, affordability, and acceptability of healthy food, as well as accommodation, such as store hours and store acceptance of Supplemental Nutrition Assistance Program (SNAP) benefits (Glanz et al., 2005; Caspi et al., 2012; Andress and Fitch, 2016; ERS, 2016a, 2016b). Rural communities have higher rates of poverty (Miller and Webber, 2003) and obesity (Davis et al., 2011; Matthews et al., 2017) compared to non-rural communities. While access to healthy food sources is improving in rural areas (Rhone, 2017), there are still significant barriers that rural residents face when attempting to purchase healthy foods. For example, in addition to poverty, access to affordable, healthy foods is greatly encumbered in rural areas since residents may have greater exposure to small corner stores that sell a limited selection of healthy food items (as compared to urban areas) (Jilcott Pitts et al., 2010a, 2010b; D'Angelo et al., 2016; McGuirt et al., 2015; Pinard et al., 2016), or alternately, rural residents may be shopping at supermarkets or supercenters that may require long travel times (Matthews et al., 2017; D'Angelo et al., 2016). Furthermore, individuals that reside in rural places with limited food access are less likely to have access to a private vehicle, and infrastructure for public transportation in rural areas is limited (Pinard et al., 2016). Thus, it is likely that these economic barriers, compounded by fewer options for healthy foods (Dutko et al., 2012; Liese et al., 2007) help explain the higher rates of nutrition-related obesity and chronic diseases found in rural areas when compared to urban areas (Blanchard and Lyson, 2006; Tai-Seale and Chandler, 2003; Befort et al., 2012).

The United States (U.S.) federal government first piloted SNAP in 1961 and it was later signed into federal law in 1964 (USDA, 2015). The primary goal of SNAP is to alleviate hunger and food insecurity. Since its creation, SNAP has shifted its focus to also include improving dietary intake with the creation of complementary federal nutrition education programs (USDA, 2018a) and healthy food purchasing incentive programs for SNAP recipients (USDA, 2018b). It is the largest federal food assistance program in the country, serving nearly 30% of all children and 21 million households with an annual budget of approximately \$75 billion (USDA, 2015). Generally, low-income individuals whose gross monthly incomes are less than 130% of the federal poverty level are eligible to apply for SNAP. SNAP offers benefits, usable as cash, for the purchase of certain foods and beverages at SNAP authorized retail food stores. Families can spend their benefits on foods and beverages for consumption at home, but they cannot be used to purchase alcohol, tobacco, dietary supplements, or hot foods served in the store (USDA, 2015). Research shows that SNAP is effective at reducing food insecurity (Mabli and Ohls, 2014; Ratcliffe et al., 2011; Nord, 2012), yet studies on SNAP recipients' diets reveal that SNAP recipients tend to have lower diet quality compared to non-recipients (DeBono et al., 2012; Gregory et al., 2013). Currently, most SNAP recipients spend a greater proportion of their benefits on nutritionally deficient foods such as sugar-sweetened beverages, snacks, and high caloric foods when compared to low-income non-SNAP recipients (Gustafson et al., 2016).

Approximately 260,000 food retailers nationwide accept SNAP, including corner stores, grocery stores, supermarkets, supercenters, and farmer's markets (CBPP, 2017). While the vast majority of SNAP benefits are redeemed at supermarkets and supercenters, corner stores supplement these larger stores as important food sources for rural residents. Corner stores are highly prevalent in rural areas compared to supermarkets or supercenters (Liese et al., 2007; McGuirt et al., 2015) and therefore, corner stores play an integral role in the rural food environment (D'Angelo et al., 2016; McGuirt et al., 2015; Pinard et al., 2016). In a rural South Carolina county, nearly 75% of all retail food outlets were corner stores, 15% were supermarkets and 10% were grocery stores (Liese et al., 2007). In one rural North Carolina county, corner stores were the predominant type of retail food outlet available

(McGuirt et al., 2015). In addition, a Connecticut based study among 258 SNAP recipients found that recipients reported purchasing milk (87%), snacks (83%), fruit (70%), and bread (70%) at corner stores (Andreyeva et al., 2008), indicating that SNAP recipients will use their benefits to purchase staple food products at corner stores.

For stores to accept SNAP, they must submit an online application through the USDA's Food and Nutrition Service (FNS) website (USDA, 2017a). USDA's FNS is the only federal agency that provides stores with licenses to accept SNAP benefits (USDA, 2014). Stores are eligible to accept SNAP if they follow certain nutrition and food sales guidelines. In 2016, to help increase access to nutritious foods for SNAP recipients, the USDA proposed new heightened requirements for SNAP-authorized retailers in comparison to existing rules 2016 (see Table 1). The proposed SNAP Retailer Rule proposed several changes to stores' stocking requirements, including, but not limited to, requiring retailers to: (1) have at least 85% of their food sales come from items that were not cooked or heated on site before or after purchase (i.e., pizza, hotdogs, or hot sandwiches); (2) stock 7 varieties of qualifying foods in 4 staple food categories (meat, poultry, fish; bread or cereals; fruits or vegetables; and dairy); (3) carry perishable foods in 3 of 4 staple food groups; and (4) carry 6 units of qualifying foods at all times. In addition, for the first time ever the proposed rule prohibited multiple ingredient foods (e.g., sandwiches, TV dinners, chicken pot pies) and accessory foods (e.g., pastries, soda, and condiments) from counting towards the variety, perishables, or depth of stock requirements (The Federal Register, 2016). The rule, as initially proposed in 2016, would have required stores to carry a minimum of 168 qualifying food items at all times; 14 times more than the old SNAP Retailer Rule. Previously, the USDA required stores to stock 4 varieties of the staple foods with only 1 unit for each of the qualifying foods, for a minimum of 12 items. Additionally, stores would no longer be able to count accessory foods (such as spices, snacks, and desserts) – often purchased to assemble meals quickly when consumers do not have time to cook – as staple foods.

To enforce SNAP Retailer Rules, FNS employees audit stores to ensure they are following the guidelines in order to keep their SNAP retailer license. However, due to the high volume of retailers, FNS employees enforce SNAP program guidelines by randomly sampling stores from across the country. Authorized retailers found guilty of not following SNAP retailer rules can be disqualified from the program, required to pay a monetary penalty, or face criminal prosecution (USDA, 2014). However, the rate of fraud and abuse in the SNAP program is at an all-time low – approximately 1.5% (USDA, 2017b)

As soon as the USDA's proposed SNAP Retailer Rule was released, it drew considerable opposition from the National Association for Convenience and Fuel Retailing (NACS). Their claim was that smaller retailers would be disproportionately affected by implementation barriers that would cause them to leave the SNAP program (NACS, 2016). NACS is an international trade association with more than 70% of their members comprised of companies that operate 10 stores or less (NACS, 2017a). NACS's list of implementation barriers included lack of shelf space to store and display the required 168 items, difficulty getting suppliers to regularly deliver fresh items to small stores compared to larger retailers, and increased food waste and profit loss due to unsold perishable items (NACS, 2017b). NACS suggested that if small stores could not meet the SNAP Retailer Rule requirements and exited the SNAP program, lower-income individuals would face reduced food access because they typically have work schedules that limit their ability to patronize larger retail stores during normal business hours. Therefore, these customers end up frequenting corner stores that stay open later or are open 24 h a day. Further, based on public comments, SNAP-authorized retailers in rural communities claimed they might experience additional implementation barriers due to their geographic location, minimum purchasing requirements from suppliers, structural constraints (e.g., limited store space or equipment), and narrower profit margins (Haynes-Maslow et al., 2018). Other studies have found similar

Table 1
Comparison of USDA SNAP retailer rule requirements: previous, proposed, and final, United States 2016.

	Number of Staple Food Categories	Number of Staple Food Varieties per Category (Variety)	Number of Staple Food Units per Variety (Depth of Stock)	Number of Food Items Required	Number Perishable Foods in Staple Food Categories	Percent of Food Sales Not Coming from Prepared Foods	Multiple Ingredient Foods	Accessory Foods
Previous rule requirements (Prior to 2016)	4	3	1	12	2	N/A	Counts toward depth of stock	Counts toward depth of stock
Proposed rule requirements (2016)	4	7	6	168	3	85%	Does not count toward depth of stock	Does not count
Final rule requirements (May 2017)	4	7	3	84	3	50%	Counts if the product's main ingredient is a staple food item (such as vegetables or fruits; dairy, meat, poultry, or fish; bread or cereals)	Does not count

perceived barriers to stocking healthier foods in rural corner stores (Palermo et al., 2017; Jilcott Pitts et al., 2012).

The final SNAP Retailer Rule, which was similar to the proposed rule, but required fewer units of each variety to be stocked, became effective on January 17, 2017, allowing retailers 12 months to become compliant (USDA, 2017c). New SNAP-authorized retailers were required to implement the rule on May 17, 2017. The final SNAP Retailer Rule includes a provision that if stores can demonstrate that they would have difficulty implementing the rule and are important for food access, they can apply for a “Need For Access” waiver (USDA, 2017c). Even though the final SNAP Retailer Rule went into effect January 2017, in May 2017, the federal government approved a federal budget that that reopened a new SNAP Retailer Rule public comment period to discuss the definition of the term “variety”. However, most recently (July 2017), the USDA’s website published a revision to the definition of “variety” reverting it back to the original rule, meaning that retailers only need to carry 3 varieties of a staple food items instead of 7 (USDA, 2017c). Therefore, store owners, SNAP recipients, and public health practitioners and advocacy groups are currently waiting for final guidance from the USDA.

It is important to note that the current study was conducted in 2016, when only the proposed SNAP Retailer Rule existed – not the final version. Even though the USDA has relaxed stocking restrictions for SNAP-authorized retailers in the final rule, recognizing that the original intent of the proposed rule was to increase access to healthy food for low-income individuals, this study sought to better understand rural corner store owners’ perceptions about stocking healthier foods. More specifically, we asked store owners about the potential challenges and facilitators to implementing the proposed rule. Not only is this study still crucial to policymakers as revisions to the final rule continue to be made, but highlighting store owners’ perspectives on healthier food stocking requirements is critical for public health programs and intervention studies that seek to increase access to healthy food for low-income individuals in rural communities.

2. Methods

This study was conducted as a part of a joint project among members of the Nutrition and Obesity Policy Research and Evaluation Network (NOPREN) Rural Food Access Working Group (NOPREN, 2017). The NOPREN Rural Food Access Working Group includes academic and non-academic researchers, public health and cooperative extension practitioners, and other experts in the field who focus on rural food access. Semi-structured interviews with store owners were used to assess rural corner store owner’s perceptions of the USDA’s proposed SNAP Retailer Rule, including the challenges and facilitators of stocking healthier foods to meet the proposed requirements.

2.1. Theory

A grounded theory approach was used to develop a better understanding of store owners’ perceptions of the challenges and facilitators of stocking healthier foods to meet the proposed requirements (Strauss and Corbin, 2015). The usual approach to grounded theory involves beginning with a general research question and collecting data until saturation has been reached – that is, the point when no new information or insights emerge from the data (Guest et al., 2006).

2.2. Data collection

RFAWG members from six states (Iowa, Montana, New York, North Carolina, Oregon, and Washington) volunteered to conduct interviews in their state’s rural communities. Members selected a specific number of counties in their state that they would be willing to drive to or conduct a telephone interview. Based on county lists we collected from RFAWG members, we first identified stores that were defined as corner

Table 2
Store owner demographics.

Characteristic	Number	Percent
State		
Iowa	4	12.5%
Montana	5	15.6%
North Carolina	10	31.3%
New York	3	9.4%
Oregon	1	3.1%
Vermont	4	12.5%
Washington	5	15.6%
Resident of the Community Where Store is Located		
Yes	18	78.3%
No	5	21.7%
Length of Time Own/Manage Store		
0–2 years	5	21.7%
3–5 years	8	34.8%
6–10 years	1	4.3%
More than 10 years	9	39.1%
Number of Full-Time Employees		
0 employees	2	8.7%
1–2 employees	6	26.1%
3–5 employees	4	17.4%
6–10 employees	4	17.4%
More than 10 employees	6	26.1%
Number of Part-Time Employees		
0 employees	3	13.0%
1–2 employees	10	43.5%
3–5 employees	3	13.0%
6–10 employees	3	13.0%
More than 10 employees	3	13.0%
Stores Yearly Sales Volume		
Over \$1 Million	10	43.5%
\$500,000–\$1 Million	4	17.4%
\$250,000–\$500,000	5	21.7%
Less than \$250,000	2	8.7%
Don't Know	2	8.7%
Store Owner Age (Mean, SD)		
Prefer Not to Answer	2	8.7%
Gender		
Male	12	52.2%
Female	11	47.8%
Prefer Not to Answer	0	0.0%
Highest Level of Education		
Less than high school	2	8.7%
High school graduate or GED	1	4.3%
Some college	10	43.5%
College graduate or more	8	34.8%
Prefer Not to Answer	2	8.7%
Store Owner Race/Ethnicity		
White/Non-Hispanic	17	73.9%
Latino/Hispanic	5	21.7%
African American	1	4.3%
Asian/Asian-American	0	0.0%
Hawaiian or other Pacific Islander	0	0.0%
American Indian or Alaskan Native	1	4.3%
Other	0	0.0%
Prefer Not to Answer	0	0.0%
Percentage of Customers using SNAP		
Less than 25%	15	65.2%
25–50%	3	13.0%
51–75%	4	17.4%
More than 75%	0	0.0%
Don't Know	1	4.3%

^aNote: Nine participants declined to complete the participant information sheets that included demographic information.

stores based on the North American Industry Classification System (NAICS) code of 445120. This code defines stores as establishments primarily engaged in selling a limited line of goods that generally includes milk, bread, soda, and snacks. NAICS codes were obtained from ReferenceUSA, an online business listing database (ReferenceUSA, 2017), which has been used in previous food access studies (Jilcott Pitts et al., 2010a, 2010b; Fleischhacker et al., 2013). We then narrowed the list of eligible stores to those who only accepted SNAP based on a USDA

website (USDA, 2017d). Lastly, we determined which stores were based in rural areas using Rural-Urban Commuting Area (RUCA) codes (ERS, 2016). Stores that had RUCA code of four or higher were considered to be rural. Based on all these criteria, we generated a list of 300 potentially eligible stores.

Each of the 300 potentially eligible corner stores were mailed a letter about the research study, including a one-page summary of the USDA's proposed SNAP Retailer Rule. Two weeks after letters were mailed, stores were contacted, either in-person or by phone, by a member of the research team. Stores were asked if they would be interested in participating in an interview lasting approximately 30 min. If they responded 'yes', the research team member confirmed their study eligibility. Study participants were eligible if they: (1) were located in Iowa, Montana, New York, North Carolina, Oregon, and Washington), (2) worked in a small corner store located in a RUCA classification code of four or higher, (3), were personally responsible for ordering the store's food items, (4) accepted SNAP, and (5) had fewer than three cash registers in their store. The number of cash registers and food ordering were self-report from interview participants. In case the participant did not receive or read the one-page summary of the proposed rule, as part of the interview process, the research team member handed participants a copy of the one-page summary explaining the proposed rule changes. If interviews were conducted over the telephone, the researcher read the summary aloud. Interviews were conducted between October 2016 and December 2016.

Upon verbal informed consent, interviews were conducted by a trained research team member by phone or in-person (based on store owners' preference) using a semi-structured interview guide (see Appendix A) that asked about store owner's perceived implementation challenges to the USDA's proposed SNAP Retailer Rule. Participants were also asked about their experience with the SNAP program and how the proposed rule might be more challenging for rural stores than and urban stores. Additionally, store owners were asked what would make it easier for them to implement the proposed SNAP Retailer Rule. Rural corner store owners were also probed about store interest in price discounts for staple food items, marketing assistance, refrigeration or shelving to display healthier food items, and waivers for rural corner stores. After the interview, participants were asked to complete a brief demographic survey. Participants received a \$25 gift card for participating in the study. Interviews were digitally recorded and transcribed verbatim simultaneously. The lead author reviewed all incoming transcripts and once it appeared that no new themes were emerging, the lead author assembled a coding team to develop a codebook. This study was approved by XXX Institutional Review Board.

2.3. Data analysis

Transcripts were analyzed using Atlas.ti version 7.0. The codebook was developed through an iterative process. Initially, three researchers (XX, XX, and XX) independently open coded five of the same transcripts and then met to compare codes, reconcile discrepancies, and create a consensus codebook. Using this codebook, responses were categorized into 6 distinct themes related to the proposed SNAP Retailer Rule. These themes were decided upon based on frequency of responses during interviews. Seven coding pairs (XX and XX; XX and XX; XX and XX; XX and XX; XX and XX; XX and XX; XX and XX) were trained using the codebook and then applied it to the data. Each coding pair independently coded approximately five of the same interviews and then met to compare and reconcile any coding discrepancies.

3. Results

Among the 300 letters mailed to stores, 32 rural corner store owners (which also includes those who did most of the food ordering) across six states participated in the study. Six interviews were conducted with Spanish-speaking store owners by an interviewer fluent in Spanish.

Table 3
Themes discussed during rural corner store interviews.

Theme	Sub-Theme	Definition	Sub-Theme Total #, (%)	Theme Total #, (%)
SNAP Retailer Rule Definition Concerns	Perishability Depth of Stock	Owner has concerns not being able to sell staple food items by "Sell-By Date" and the products spoiling Owner discusses the depth of stock – this includes having concerns about requiring to carry a minimum depth of stock for staple food items	39 (8.4) 31 (6.7)	112 (24.6)
	Concerns About being Disqualified as a SNAP Retailer Concerns Over Distinction Between Prepared and Unprepared foods Supply Chain Distribution	Owners mention having concerns over not being able to satisfy the proposed rule requirements and being disqualified from the program Owner mentioned concerns over how the USDA defines prepared and unprepared foods in the SNAP program	24 (3.2) 18 (3.9)	
Challenges to SNAP Retailer Rule Implementation	Store Space Equipment	Owner discusses economics of scale for products, finding/not having to find new suppliers, or having/not having suppliers for staple food items Store owner discusses having space for items, this includes store square footage. Store owner discusses having adequate equipment and supplies, including coolers, refrigeration, and shelving	42 (9.1) 29 (6.2) 22 (4.8)	93 (20.4)
	Marketing Assistance Waivers for Rural Stores Price Discounts Need to Offer Clear Guidance on Items	Mentions need for marketing assistance (i.e., signage, product placement) for store owners Mentions interest in applying for rural store small food waiver Mentions financial assistance for stores, tax breaks, grants, pricing incentives, ect. Stores need to have SNAP Retailer Rules communicated clearly to them with ample guidance	29 (6.2) 27 (5.8) 23 (5.0) 11 (2.4)	
Perception of Customers	Current SNAP Customer Purchasing Behaviors	Owner mentions current SNAP customer purchasing behaviors, including what they use SNAP benefits to purchase and the convenience of purchasing prepared foods	34 (9.3)	74 (16.3)
	Lack of Customer Demand for Staple Food Items Judgement of SNAP Customers by Retailer	Owner discusses perceived lack of demand from SNAP customers for healthy food Store owner expresses negative sentiment or resentment about SNAP customers	18 (3.9) 17 (3.7)	
Benefits of Participating in the SNAP Program		Owner mentions the general benefits of participating in the SNAP program, including increased customers, increased revenue, and meeting customer needs	45 (9.9)	
Threats to Economic Viability		Store owner discusses reduced profit margins due to rule implementation or other financial concerns such as going out-of-business or losing customers	41 (9.0)	
Total			462	

Store and store owner demographics are listed in Table 2. Results in Table 2 are based on the 21 store owners that chose to complete the demographic survey. More than 50% of store owners were male and had at least some college education. Approximately 40% had managed their stores for at least 10 years and more than 40% of the stores recorded over \$1 million in annual sales. Additionally, the majority of store owners (N = 15) estimated that less than 25% of their customers used SNAP. Nearly 80% of store owners were residents of the community where their store was located.

The six main themes that emerged from the interviews (listed from most frequently cited to least frequently cited) were: (1) SNAP Retailer Rule definition concerns; (2) challenges to implementation; (3) facilitators to implementation; (4) perceptions of SNAP customers; (5) benefits of being a participating retailer in the SNAP program; and (6) economic concerns about being required to carry healthier items consistent with the proposed rule. See Table 3 for a description of the themes.

3.1. SNAP retailer rule definition concerns

Store owners focused predominately on aspects of the SNAP Retailer Rule pertaining to rule definitions. Retailers' main concerns were about the impact that rule implementation would have on the store's future. Concerns about changes to rule definitions for SNAP retailers were mentioned a total of 112 times, nearly 25% of all codes, across all 32 interviews. Concerns included: (1) perishability (sell-by-date) of staple food items; (2) increased depth of stock requirements; (3) potential disqualification as a SNAP retailer; and (4) the new distinction between prepared and unprepared foods.

The largest concern among store owners was about being required to stock perishable foods in three of the four staple food groups. Most store owners paid strict attention to "sell by" dates and were concerned about perishable staple food items spoiling and having to discard them. As one owner stated: *"If I picked up all the required [staple food] items, and only some of them really moved, then I'm throwing away stuff because it's outdated, especially the perishables,"* [Participant 22].

The second largest concern among store owners was around the "depth of stock" requirement. As one store owner commented, *"It might be kind of hard to keep that much food in stock for us because we're a small country store,"* [Participant 10]. That participant was concerned he would not have enough space to keep 168 required items in his store. Several participants discussed the connection between depth of stock and perishability. However, when asked how close store owners thought their store was to meeting the proposed depth of stock requirements, most of the participants felt they were somewhat close to meeting them.

A number of store owners did express concerns that their store would not be able to accommodate the requirements in the USDA's proposed retailer rule and that they would be disqualified from the SNAP program. One store owner commented that if the proposed rule was passed they would not comply with the changes, and if they were caught they would choose to stop participating in the SNAP program. However, several store owners felt that this might negatively impact their SNAP customers: *"I know that if the requirements became too hard to meet, it wouldn't be worth it to us...we probably would just discontinue it, which would be unfortunate for our customers because we're the only store in the area,"* [Participant 19].

One last concern regarding changing SNAP Retailer Rule definitions was the distinction between prepared and unprepared foods. Prepared foods are considered foods that are prepared or heated on site by the store such as pizza, hotdogs, or hot sandwiches. As one store owner stated, *"If I did not have prepared foods...I'd be out of business,"* [Participant 11]. Prepared foods were seen as "profitable" items to sell to customers, especially for customers receiving SNAP. Even though SNAP recipients cannot use their benefits on prepared foods, there was the perception that SNAP customers had a high demand for these items

since they lacked the cooking equipment or space requirements necessary to make their own meals – or it was more convenient to purchase prepared foods due to lack of time. Therefore, SNAP customers would pay for prepared foods with their personal money. Prepared foods were seen as a way of getting customers in the door.

3.2. Challenges to rule implementation

Rural corner store owners discussed the potential challenges of implementing the proposed retailer rule. Potential challenges were mentioned a total of 93 times, approximately 20% of all codes across 32 interviews. The three greatest challenges discussed were: (1) issues relating to supply chain distribution; (2) store space; and (3) equipment. Most rural corner store owners felt they could find a supplier to purchase staple food items from, but several were concerned about having to find different suppliers for perishable foods. The greatest concern was not having large enough food orders from suppliers to make it worth their while; owners were concerned about being charged higher unit prices and delivery fees unless they had greater shipping amounts for food orders. One store owner described the situation as: *"Not every supplier will stop at a small convenience store to drop off items because it's not worth their time. It's got to be beneficial [the supplier] to even stock...The items have got to be something you can get local, and fresh, and that it's not going to be cost prohibitive,"* [Participant 4].

When asked the question, "Do you have any challenges regarding space in your store?" approximately half of the store owners responded "yes". Some rural corner store owners were concerned that they did not have enough space in their store to store all the required food items, as their stores were small and had limited shelf space and square footage. These owners acknowledged the importance of making healthier foods more available to SNAP participants, but because of limited store space, it would not be possible for their store. Many store owners felt that given more refrigeration or shelving, they could carry a larger selection of healthy foods. However, refrigerated space in rural corner stores often is leased to the store by food industry corporations, which only allow their products in the coolers.

3.3. Facilitators for SNAP retailer rule implementation

When asked about potential facilitators for helping store owners implement the USDA's SNAP Retailer Rule, participants discussed this a total of 90 times, approximately 20% of all codes, across 32 interviews. Four facilitators frequently discussed were: (1) price discounts, (2) marketing assistance; (3) waivers for rural corner stores; and (4) the need for the USDA to offer clear guidance on qualifying food items. Among facilitators, stores were most interested in price discounts. As one store owner said generally about their food products, *"If we're able to get discounts, and we're able to get the same price [name of a regional grocery store] is getting it for, and we're able to sell for the same price they're selling for, we might be able to sell it,"* [Participant 10]. However, most store owners recognized that logistically and financially, receiving price discounts from the USDA would probably not be a realistic option for a federal agency.

Some store owners agreed that marketing assistance would help them sell staple food items to SNAP recipients. This assistance could include advertising, product placement, and signage. Often, store owners did not have experience in marketing or product placement and believed that receiving technical assistance with these marketing techniques would help sell items described in the proposed retailer rule. However, other store owners felt it would not be enough to change customers' behaviors: *"I don't think marketing would change it because you still have some stores that's been in business for several years that a certain clientele that comes to them anyway. I don't think having more marketing would actually have more benefit,"* [Participant 3].

To help comply with the proposed rule, store owners mentioned the need for the rule to be clearly communicated to them with ample

guidance from the USDA. After store owners were given a one-pager of the proposed rule changes during the interview, it became apparent that for many store owners, this was the first time seeing the proposed rule, which prompted many to comment that there was need to have the rule clearly communicated with them. Some owners felt it would be helpful to have more guidance from the USDA.

Regarding flexibility, one store owner said: *“The challenge would be if there was some little incidental rule the Department of Agriculture would not be a little bit flexible on,”* [Participant 22]. The same store owners even questioned how the USDA would enforce the rule, asking *“Is somebody going to come and tag my 168 items? I think that’s ridiculous,”* [Participant 22]. Along the lines of flexibility for the proposed SNAP Retailer Rule, when asked if store owners would be interested in applying for a waiver for rural corner stores, every owner said they would have interest – depending on how complicated and cumbersome applying for the waiver would be.

3.4. Perceptions of SNAP customers

While corner store owners were not asked specifically by interviewers about current SNAP customers, many rural corner store owners openly discussed their personal opinions about their SNAP customers. This included: (1) commenting on the different types of food SNAP recipients used to purchase with their benefits; (2) a perceived lack of customer demand for staple food items; and (3) sharing negative sentiments or resentment about SNAP customers food purchasing behaviors, such as using benefits to purchase nutritionally deficient foods.

Nearly 9% of rural corner store owners mentioned that SNAP participants spent the majority of their benefits on junk foods including soda, candy and chips. One rural corner store owner said, *“We have a large section of our customer base that use food stamp cards, and I can honestly say that nothing they purchase is healthy,”* [Participant 19]. They noted that SNAP participants mostly use their benefits on purchasing snack products rather than staple food items, such as meat, poultry, fish; bread or cereals; fruits or vegetables; and dairy. Several rural corner store owners perceived there to be a lack of demand for healthy food among SNAP customers: *“If I have one person ask me if I sell grapefruit, I’m not bringing it in. If I have six people ask me if I sell grapefruit, now you’ve got something, but their [SNAP recipients] eating habits are different,”* [Participant 11].

While many store owners felt the SNAP program was important for their communities, several owners commented on the purchasing practices of their SNAP customers. One participant commented: *“It kind of aggravates the employees, and sometimes I roll my eyes at what they use food stamps to buy; for example, the jerkies, and the candy bars, and things that really are not nutritious...It’s disappointing for us to see the donuts, and the sugars, and all that stuff that this person is buying instead of the vegetables and all that,”* [Participant 22].

3.5. Benefits participating in the SNAP program

Benefits to store owners for participating in the SNAP program were mentioned a total of 45 times, approximately 10% of all codes, across 32 interviews. Rural corner store owners described the general benefits of participating in the program as being increase in the number of SNAP customers, increased revenue, and meeting customer needs. Many store owners believed they received more business by participating in the program than they would without it. One rural corner store owner said, *“I think probably the biggest thing for us is it gives us that repeat customer...They’re already coming for gas...If we have milk and other food stamp items that are necessary for their children, they will come in the store and not just buy gas,”* [Participant 25]. This was a similar sentiment that store owners shared about SNAP customers coming in to purchase hot and prepared foods using cash, but then supplementing staple food item purchases with their SNAP benefits.

Some rural corner store owners also acknowledged more than just

the financial benefits that the SNAP program gave their store. They liked the idea that it gave them a chance to help low-income families in their community get food on the table. One rural corner store owner said a huge benefit to participating in the program was *“just being able to accept anybody that walks in the store,”* [Participant 17]. Some store owners were proud that they could serve all customers, including those that use SNAP benefits, unlike other stores in their community. Most rural corner store owners agreed that the benefits of participating in the SNAP program were much greater than the costs.

3.6. Threats to economic viability

In response to the proposed SNAP Retailer Rule, some rural corner store owners discussed reduced profit margins due to rule implementation or other financial concerns such as going out-of-business or losing customers. Some were concerned that they would not be able to comply with the new standards and would be eliminated from the SNAP program: *“If the rule got passed, and we didn’t get it approved, we probably would lose a lot of business,”* [Participant 19]. Some rural corner store owners did not think the SNAP Retailer Rule would significantly impact their store’s finances. As one rural corner store owner said, *“I would walk away from this program first. It’s not a tremendous amount of money for me,”* [Participant 11]. However, most rural corner store owners expressed an interest in serving SNAP customers as it provided an important source of revenue.

4. Discussion

While we wait for final guidance on the USDA’s SNAP Retailer Rule from the U.S. Federal Government, this study has helped elucidate the perceived implementation barriers and potential facilitators to stocking healthier foods from the perspective of rural corner store owners. Participation in the SNAP program was important for most retailers interviewed for this study – both from a philanthropic and financial standpoint. SNAP recipients constitute a substantial proportion of shoppers at rural food stores and program participation was seen as an important strategy to serve one’s community. According to 2014 report by the Center for Rural Affairs, 14.6% of rural households received SNAP between 2008 and 2012, compared to 10.9% of households living in metropolitan areas (Center for Rural Affairs, 2014). Although most store owners did not believe major changes would be required to bring their stores into compliance with the proposed rule, all expressed concerns about more stringent stocking requirements. Based on this study’s results, the “Need For Access” waiver would likely be welcomed by rural corner store owners since most expressed a reliance on SNAP for their financial viability. It would also help address their concerns for not being able to adhere to the proposed SNAP Retailer Rule. The potential loss of SNAP authorized retailers in rural areas is particularly important since there would be fewer options for purchasing SNAP-eligible foods than in urban areas. Several studies have documented that small retail food outlets, including corner stores, are integral parts of the rural food environment (Liese et al., 2007; McGuirt et al., 2015; Pinard et al., 2016). Additionally, a study in Texas among 101 neighborhoods in 6 rural counties found that rural residents were only 3.1 miles to the nearest convenience store – compared to 9.9 miles to the nearest supermarket (Sharkey et al., 2010). If rural corner stores owners dropped out of the SNAP program, it would be an additional burden for low-income rural residents to drive even further to the nearest SNAP retailer (most likely a large grocery store or supermarket). Additionally, healthier foods are often more expensive in corner stores than in supermarkets. One study found that even when healthy food items were available in corner stores, they were 20% more expensive than the nearest supermarket price (Franco et al., 2007).

Policymakers and public health researchers should consider how they can work with rural residents and rural retail food outlets to increase the healthfulness of foods offered and purchases made. It is

important for researchers to examine the reasoning for stocking certain foods among rural corner store owners, types of interventions to increase healthy food purchase among SNAP recipients, and opportunities to make healthy foods more affordable in rural areas. Previous research has suggested healthy corner store initiatives as one strategy for addressing the U.S. obesity epidemic (Gittelsohn, 2012; Langellier et al., 2013).

Under the proposed rule, rural food stores may have faced difficulties stocking the healthier foods required. However, since the final rule has loosened the restrictions, this is not an immediate cause for concern. However, if this type of rule is to be proposed in the future – at the local or state level, rural corner store owners will probably still be concerned about fresh foods having limited shelf lives and may be sensitive to long transit times for fresh food items. These concerns have been observed previously in the literature (Calancie et al., 2015). For many, meeting the USDA’s original proposed requirements would mean coordinating more frequent shipments and negotiating new agreements with suppliers. Store owners also identified limited in-store shelf and refrigerator space as a key barrier, but suggested that this usually could be overcome with limited assistance. Therefore, adequate supply and distribution chains for small food stores in rural areas pose significant barriers that need to be addressed, as articulated in a review of nutrition-related policy and environmental strategies to prevent obesity in rural areas (Calancie et al., 2015).

At the same time, many store owners perceived low customer demand for healthy options and worried about increased food waste potentially incurred with more perishable foods. SNAP participants’ purchasing habits were thought to be incongruent with the proposed rule. Prepared foods, which under the proposed rule would not count towards the variety, perishables, or depth of stock requirements, were considered to be frequently purchased items by SNAP participants. There were common concerns among store owners that changing the supply would not be met with parallel changes in demand; thus resulting in lost profit due to spoilage. These concerns have previously been identified among store owners in North Carolina considering stocking healthier options (Jilcott Pitts et al., 2012).

Perishability of healthier foods, specifically produce, was also a concern in this and other studies (Haynes-Maslow et al., 2018). In the current study, rural corner store owners were aware that healthier foods are also more perishable, and have seen instances where they have tried to stock healthier foods, only to see the food go to waste due to lack of customer demand. Methods to increase marketing and promotion of healthy foods in small stores are needed to increase demand for such products (D’Angelo et al., 2016) and ultimately, to reduce lost profits resulting from spoilage.

Limitations of this study include the potential lack of generalizability for owners of small stores in urban areas. As mentioned previously, in urban areas, the majority of SNAP recipients spend their benefits in large retail food settings such as supermarkets or supercenters (nearly 80% of SNAP benefits are redeemed at these retail food settings), while in rural areas, corner stores are usually the main food shopping source. Therefore, the perceptions that rural corner store owners have about their SNAP customers may not reflect the overall purchasing patterns of all SNAP customers nationwide (both rural and urban). Due to the study design of only choosing stores classified by NAICS as convenience or corner stores, this study did not include dollar stores, an important part of the food environment in low-income areas (Racine et al., 2016). However, the study is strengthened by its focus on rural, understudied areas, multi-state data collection effort, double-coding and reconciling of codes by coders.

5. Conclusions

Findings from this study show that rural corner stores will need technical assistance to help stock healthier food. Specifically, it reveals that rural corner store owners will need help promoting healthier food

options, appropriately handling perishable items, finding suppliers that can adhere to their food delivery requirements, and maintaining their SNAP retailer license. Recognizing the implementation challenges of stocking healthier foods for corner stores and presenting feasible solutions to them can improve the likelihood of successful passages of healthy food access policies and programs. Future policies and/or requirements focusing on stocking healthier foods should focus on special considerations for small food retailers and community members to avoid unintended consequences due to rural geographic areas’ unique foodscape and business models.

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Appendix A

Interview Questions

1. Tell me about your experience with the SNAP program.
 - a. What are the benefits of participating?
 - b. Have you encountered any difficulties? Can you describe them?
2. At first glance, what are your initial thoughts about the USDA’s proposed rule?
3. Right now, how close do you think your store is to meeting the proposed requirements? Would you say: (1) very far from meeting the requirements, (2) somewhat close to meeting the requirements, or (3) already meeting the requirements?
4. How do you think the USDA’s proposed rule might impact rural stores differently than urban stores?
5. In general, what challenges do you think your store would have in meeting these requirements?
 - a. *Probe:* Do you think you have enough space to stock all these items?
 - b. *Probe:* Do you think your suppliers would be able to supply all these items? If not, which staple foods might suppliers find difficult to fill?
 - c. *Probe:* Do you think you would have to find additional suppliers to purchase these items from?
6. How do you think meeting the USDA’s requirements would impact your store’s finances?
7. What do you think would make it easier for your store to meet the USDA’s proposed requirements? (*Wait for participant’s response before asking probes*)
 - a. *Probe:* Would it be helpful if you were offered marketing tips for healthier food items? This could include things like product placement and signs.
 - b. *Probe:* Would it be helpful if you were given price discounts, deals, or coupons for healthier food items in your store?

c. *Probe*: Would it help if you were given additional refrigeration or shelving to place some of the healthier food items?

L. If the USDA were to offer a waiver for rural small food stores from this rule, do you think you would apply for it? Tell more about.

Appendix B. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.foodpol.2018.10.004>.

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