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Small Retailer Perspectives of the 2009 Women, Infants and Children Program Food Package Changes

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Abstract

Objective—To understand vendor perspectives regarding changes made in 2009 to the Special Supplemental Nutrition Program for Women, Infant, and Children (WIC) food package.

Methods—Fifty-two in-depth, qualitative interviews with owners or managers of small stores in 8 urban areas across 7 states conducted 6-12 months after the changes.

Results—Store owners experienced implementation challenges, but felt the changes increased the number of customers, sales, and profits.

Conclusion—This research provides vendor perspectives on the 2009 WIC policy changes and may enhance policy implementation directed at increasing healthy food availability, particularly in urban communities.

Keywords

WIC; qualitative research; storeowner perspectives; food policy; sales

The relationship between poor dietary intake and adverse health outcomes has been well established. For example, diets rich in fruits and vegetables and whole grains and low in saturated fat have been associated with a lower risk of a number of conditions including obesity, cardiovascular disease, diabetes, and some cancers.¹ Low-income and minority populations are disproportionately at risk for poor dietary intake.²⁻⁵ Socioeconomic disparities in dietary quality start in early childhood, and dietary intakes of lower income children fall short of recommended levels for several food groups and nutrients including fruits and vegetables, vitamin A, vitamin E, calcium, zinc, and iron.⁶⁻⁹ Dietary patterns adopted in early life can provide the foundation for food habits in later childhood and adulthood. Consequently, early childhood is a critical time to improve diets among low-income populations overall and reduce related health disparities.

Federal food and nutrition assistance programs play a vital role in shaping the diets of low-income children and their families. Established in 1972, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is one of the largest nutrition assistance programs in the United States. In 2010, WIC provided supplemental foods, health care referrals, and nutrition education to 9.2 million low-income pregnant and post-partum women, infants, and children up to age 5 who were found to be at nutritional risk.¹⁰ Until 2009, the WIC food package relied heavily on dairy products (cheese and milk) and juice; it included little in the way of fruits and vegetables. Other WIC-authorized foods included infant formula, iron-fortified cereals, eggs, legumes, canned tuna, and peanut butter.¹¹ Despite improved knowledge about nutrition, shifts in dietary deficiencies and obesity rates, and increasing racial and ethnic diversity in the WIC population, the food package had not been updated since 1980.¹²

In 2009, the USDA implemented new WIC food packages based on the Institute of Medicine's recommendations.¹² The revisions aligned the packages with the 2005 Dietary Guidelines of Americans and infant-feeding practice guidelines of the American Academy of Pediatrics.¹³ They addressed dietary imbalances among young children and women, such as excessive intake of saturated fat and sodium and low intake of fiber, vitamin E, and iron.¹⁴ Fruits, vegetables, and whole grains were added; and the quantity of fruit juice was cut in half. Saturated fat and cholesterol content of the packages was lowered by reducing the amount of milk, cheese, and eggs, as well as allowing whole milk only for children

under 2 years.¹⁴ State agencies were given flexibility in prescribing food packages to accommodate the cultural food preferences of WIC participants.¹⁵ For example, in addition to whole-wheat bread, states could choose to include one or more options of whole-grain tortillas, brown rice, oats, and other whole grains.¹⁵ The revision recognized that WIC participants, like the population at large, increasingly rely on convenience foods. Therefore, states could offer canned beans—in addition to dried—as well as frozen, canned, and dried varieties of fruits and vegetables.¹⁴

Poor diet among low-income populations is partially attributed to the low availability of healthy foods.^{16,17} Previous studies show associations between food environments and healthy eating, obesity, and chronic diseases in low-income urban populations.¹⁸⁻²¹ Changes to WIC policy have the potential to improve the food environment for low-income communities by increasing the availability of healthy foods.

In most states, food packages are redeemed at authorized retailers, or “WIC vendors.” Understanding vendor perspectives on program implementation is crucial for successful outcomes and sustainability.^{22,23} The Institute of Medicine's report, *WIC Food Packages: Time for a Change*, discussed positive perspectives (eg, increased sales of high profit margin groceries, new customers) as well as negative perspectives (eg, increased costs) on what vendors may experience from the new WIC food package.¹² Now that the new WIC food packages have been implemented, it is important to explore implementation successes and challenges across the United States so that additional changes can be made. We located only 2 published studies that looked at vendor perspectives on the new WIC food package, particularly among vendors operating small food stores, and only one has taken a qualitative approach.²⁴ A recent study assessed Connecticut retailers' perspectives on the new WIC program through structured, in-person interviews before and after the change (n=68). Most retailers (71%) were happy or very happy to participate in the new WIC program because of additional sales, financial stability in economic downturns, and spillovers into non-WIC products.²⁵ A report based on interviews of small store-owners in Colorado, New Hampshire,

Pennsylvania, and Wisconsin before (n=35) and after (n=43) the WIC food package change revealed generally positive perceptions of the changes, though a number of owners reported difficulty with limited refrigeration equipment and the ability to keep foods fresh.²⁴ Given state-level variability in the WIC program and stocking requirements, as well as the known differences in healthy food availability in small, urban corner stores across the United States,²⁶ it is important to expand our understanding by conducting additional research across a wide array of geographic regions, focusing on the experiences of small stores.

This paper sought to explore the perceptions of owners and managers of small food stores about the new WIC packages through in-depth interviews of 52 store owners/managers across 7 states.

Methods

This study was conducted as an ancillary activity of the Robert Wood Johnson Healthy Eating Research Corner Stores Working Group, a group of grantees and affiliated investigators, some of whom had previously received funding to conduct research on small food stores throughout the United States. Eight research teams from 7 states agreed to train and provide staff to conduct in-depth interviews with small store owners/managers in their respective sites.

A common interviewing protocol was used, which consisted of 2 sections. The first included 13 open-ended questions about small store operations and the effect of the new WIC packages. The second included close-ended questions about the estimated impact of the WIC package changes on store stocks and sales of key foods, as well as the store's key demographic and descriptive characteristics (not discussed in this paper). The interview guide was translated into Spanish by a certified translator and verified by bilingual individuals at 2 different sites.

The lead author conducted a telephone training to orient data collectors at each site on how to conduct in-depth interviews and to review the interview guide. Interviews were conducted from April to December 2010. Fifty-two in-depth interviews were conducted in the 8 sites (Table 1). Five interviews were conducted and coded in Spanish. Spanish transcripts were coded by a native Spanish-speaking coauthor (GXA). Three of the interviews were conducted in Korean and then translated into English by a Korean-speaking research assistant.

A purposive sampling approach was used to identify store owners/managers for the interviews, with similar numbers of interviews conducted per site (ranging from 5 to 10). Participants were required to be the owner or manager of a small food store (< 6 aisles and <3 cash registers), to have worked in the store for at least one year (ie, beginning prior to the initiation of the new WIC package), and to be a WIC vendor. Participants were offered cash or a monetary incentive (eg, gift card) ranging from \$15 to \$30 for completing the interview.

Responses to the open-ended questions were digitally recorded and transcribed. Following a review of 2 transcripts, the working group collectively developed a coding scheme that went through several iterations. The working group collectively reviewed 3 interview transcripts from different sites, modified codes on the basis of this experience, and reached consensus about when to use each code. Coding and data analysis were conducted using Atlas-ti 6.1 (Berlin, Scientific Software Development). All codes were applied by a single coder, with support and guidance from the lead author. The analyses presented here focused on answering 4 key research questions: (1) How are stocking decisions made at small food stores? (2) What benefits are experienced by small store owners with the new WIC packages? (3) What challenges were faced by small store owners in implementing the new WIC packages? (4) What factors influenced the ease with which the new WIC packages were implemented by small stores? Matrices and tables were used to summarize and present results. Each participant was provided written informed consent prior to the interview, and the study was approved by the IRBs at each of the 8 participating institutions.

Results

Interviews were conducted with the owner/managers of 52 small urban food stores, specifically convenience stores (55.8%), independent grocery stores (17.3%), and grocery stores with 2 to 5 locations (19.2%). The majority (57.1%) had 1-2 full-time employees. Stores were small, with a median of 3 aisles and only 1 cash register. Store owners/managers reported an average of 30 WIC customers per week, (range 5 – 800 customers), and estimated that WIC customers constituted 21-30% of their total customer base. Most store owners/managers were male (83.7%), and their ethnicity varied, with high proportions of individuals who self-identified as Hispanic (34.9%), Asian (27.9%), and white (18.6%).

Stocking Decisions in Small Food Stores

Small store owners across the 8 sites were remarkably consistent in their rationale for stocking certain foods over others: supply and demand. As one store owner remarked,

Well, for the most part I would say supply and demand, you know whenever I notice which things are going off the shelf quicker ... things like that or even personal customers that come here frequently ... things they specifically like, I try to keep stocked, but for the most part supply and demand.

(Baltimore, P1)

Store owners do not weigh all instances of customer demand equally. Small stores report relying heavily on their repeat, regular customers and going to great lengths to satisfy them and meet their requests for foods. Store owners spoke of wanting to create a “comfortable” atmosphere for their customers:

And usually what I do is when they come here...if they're not finding what they're want, I stop 'em before they leave and I find out what they want, and I make sure they have it the next day. A lot of my customers, they, I'm pretty much known around the neighborhood cause of that. I don't give them a hard time, if something's wrong I correct it right then and make sure that they get what they want.

(New Haven area, P13)

Some store owners pointed to the ethnic makeup of their clientele as a decision maker for what they would carry:

However, if I notice that the majority of my customers are Hispanic, I'm obviously going to bring in more Hispanic products, without forgetting the rest.

(translated from Spanish, San Diego, P22)

Alternatively, some store owners mentioned frequent inventorying as a means of figuring out what to stock:

Well I go over the inventory every week, you know, the grocery order comes in, you know ... I take the inventory. Whatever's missing - I replace.

(New Orleans, P28)

Interestingly, profitability was not commonly mentioned as part of the rationale for general stocking decisions.

Benefits of the New WIC Packages

Small store owners and managers were overall very supportive of WIC and the changes to the WIC program and identified many benefits (Table 2). From their perspective, stocking WIC-approved foods brings in new customers and attracts non-WIC customers due to the broader variety of foods available. A Baltimore store owner described the changes to her customer base:

They changed, they definitely changed... changed for the better. ... they shop for other things, and that's what we want... we want them to shop for other things. Sometimes they might just get nothing but the WIC, but they'll come back... because they'll see other things that we have in the store.

(Baltimore, P2)

Another retailer expressed how the new WIC packages helped him to solidify his existing neighborhood customer base:

The person who comes for WIC will buy several other things ... the people who come and cash the WIC here, also they are like regular customers. They don't really come from any other neighborhood to cash WIC here ... But instead of going so far they will come here just for the WIC and because they like us, we still keep that WIC and we keep the customers for other stuff. But it's our neighborhood store, it's our neighborhood people will always come.

(Minneapolis/St. Paul, P35)

Because these new customers purchase a variety of foods, many informants reported an associated increase in profits:

(WIC) helps because... under such economic downturn, it helps since it adds up to our profit. So, overall gross profit increases. While ago, corner store owners did not know much about the benefit of participating in WIC. But I hear that these days, many Korean storeowners know about WIC and actually participate because it is very helpful to keep the business going. It's somewhat stable income, especially because business is so slow.

(Baltimore, P43)

I think it's positive changes ... our grocery sales improve are gaining up. Usually the juice are selling more because they have more flavors, so the people can choose. So it's ... the sales are very increasing right now ... in grocery and produce.

(San Diego, P20)

Convenience was noted by many as an advantage to customers, as one store owner noted,

Oh, everybody happy! [Laughter] Like people been comin' in and it's more easy for them. They don't have to go too far to get what they need.

(Philadelphia, P25).

Several store owners saw improved diet and health in the community as a long-term outcome of the changes:

I think it's better because I notice that they're going in a healthier direction. So I mean obviously that's better you know for long run, short term - everything. It's better overall. I mean, I doubt the kids will like it but, you know actually the parents do.

(Chicago area, P6)

It should be noted that although most store owners were quite enthusiastic about the benefits of the new WIC packages, a few stated that the new package had no impact on their customer relations or sales. As one seller noted,

I mean, as I told you the fruits and vegetables and the extra Gerber brings more money to the store, but at the same time ... you have to, I have to pay for delivery of food whatever comes in here, so it kind of ends up equaling out. As I said, it's not changes that makes or breaks a store. It's not gonna make the store close, but it's not gonna make the store wild with profits.

(Minneapolis/St. Paul, P41)

Challenges With the New WIC Packages

Despite the many benefits associated with the new WIC packages, store owners did express multiple challenges with implementation of the new directives (Table 2). For most owners, these challenges occurred at the beginning of the implementation of the new package and were resolved within a few months.

Store owners reported that many customers did not understand or were unaware of the new WIC packages, and therefore an initial common challenge was difficulty in explaining the changes to their customers:

Some of the challenges is time ... you have to spend time with the customers ... especially new customers. You have to explain to them what they need to get and this and that because we're not just a WIC store ... we have everything, you know. A lot of customers like to come here because it's convenient for them ... because they don't go in the store where there's just WIC and they feel awkward. They come here and they feel like all of our customers you know and they go out ... We have to spend time to explain to the customers, but you know, we don't really have a big problem with that.

(Oakland, P19)

Because there are times there are customers who haven't gone to the talks [to learn about the changes], or don't know, and they still really want some particular product, and then we [have to] show them the coupon [voucher] and tell them that this is how it is...

(translated from Spanish, Oakland, P4)

At least initially, store owners reported that customers would pressure them to provide a less healthy option in exchange for WIC vouchers. As a New Haven area-based store owner noted,

They come in and they want the 2% (milk) and they want all that, it can't be done. "Oh well why do I have to get the one without sugar" you know, 'cause that's what it says on the check. I can't do anything for you. ... Oh but...they try, they try. They try and I've actually, probably lost a few (customers). But they end up coming back anyway because when it gets below 0 (degrees), nobody wants to go around the corner, or down the block. They come here and they get what they have to get.

(New Haven area, P13)

For many foods, particularly perishable foods, a related challenge reported was keeping the appropriate foods in stock:

We been doing good with WIC, we getting a lot of customers so a lot of times, things are out ... but sometime it's difficult to keep up. Sometime people come for ... 10 people come for 4 gallon milk ... each 2 gallon 3 gallon, 2 gallon 3 gallon. ... One week you see a lot of people, one week you know, sometime you don't see that many. It's a buying pattern ... it affects, because especially like perishable food, you know it's tough to keep up sometimes.

(New Haven area, P10)

Like having everything stocked and making sure ... like the vouchers doesn't let you like ... you have to buy everything - you can't come back for other, like let's say it says one gallon and a half, and whole grains, and we don't have the whole grains, like they're gonna want that, so they cannot take it and come back later, so we have to have everything stocked for them.

(San Diego, P22)

Challenges and Benefits Associated With Specific Foods

Small store owners commonly expressed challenges related to locating a reliable supply source and having sufficient sales to justify stocking perishable foods. Lower-fat milk, fresh produce, and whole wheat bread were the most frequently mentioned foods of concern.

Lower-fat milk—Most store owners described initial problems with WIC consumers' acceptance of lower-fat milk (skim, 1%, or 2%):

Everybody else wants ... I mean I turn down a lot of customers because I don't give them the milk that they want. They want the milk that's not on the WIC. So I have to turn down a lot of customers for that because they say, "Well, so and so give it to us ... we cannot drink this milk, this is not the right milk."

(New Orleans, P29)

After some time, consumer acceptance of lower-fat milk increased, and the issue became less pressing. As one Baltimore store owner commented,

A lot of them are telling me, not all of them, but a lot of them are telling me they like the idea of the low percentage milk.... A lot of them are still fussy about it, but a lot of them gotten used to it now, and they like it, and they know it's better for their kids - it's less fat. They are adjusting.

(Baltimore, P2)

Another store owner cited language issues as being part of the barrier to accepting lower-fat milk:

It started out slow for everybody to get used to it, especially customers. I want to say about 90 ... about 80% of my customers that have WIC are Latino based and they didn't understand it very well, so I had to help a lot of my customers understand and help them fill out their WIC vouchers. Most of them are ... you know, some of them were mad that they can't have whole milk on their WIC vouchers anymore ... but it seems like it's going pretty smooth now. Seems like everybody's got a hang of it ... you know they understand the WIC more 'cause there's more items on the WIC. They didn't understand it as much as they should have ... took in their time, and made these customers aware on how to use the new WIC vouchers.

(Minneapolis/St. Paul, P37)

Fresh produce—The requirements to stock fresh produce had initial challenges, but long-term benefits from the vendor perspective. Store owners reported that their customers were uniformly happy with increased availability of fresh produce:

They like the idea of the vegetables, they really like the vegetables because they can get greens, they like the idea of getting greens - frozen stuff for fresh, whatever... and the vegetables, some of them just buy nothing but the vegetables, with their vegetable and fruit voucher, they don't get nothing but vegetables. ... so that was a plus.

(Baltimore, P2)

Produce, okay, they ... for us, our customers really enjoy the ... see, the customer has the option of buying fresh goods or canned goods ... our customers of course prefer the fresh much, much [more] than the canned goods. For one ... 2 things - liking the freshness, and the other thing is we're a high-volume produce store, so we work on a very low mark up, so the customer is getting a lot more for their vouchers.

(San Diego, P21)

Before the 2009 WIC changes, many stores did not carry fresh produce because it was hard to get and/or because nearby larger stores carried it. Another store owner observed that stocking fresh produce opened new shopping opportunities for the customers we already had so, 'cause you know some people want to buy fruits and vegetables from the corner store don't feel like running to ... (supermarket name), so we didn't really have that many selections, but now we do.

(Minneapolis/St. Paul, P41)

Many store owners developed communications strategies to turn the WIC produce vouchers to their advantage:

And as far as the fresh fruits, we tell them that they've always been for sale here, but now instead of paying out of their pocket, they can get it for free.

(translated from Spanish, Oakland P2).

Stocking fresh produce also reportedly had unintended benefits, as some store owners reported that non-WIC customers also buy the produce. One Baltimore store owner mentioned how having a produce display improved the atmosphere of her store. However, stocking produce did incur specific challenges as well. Some stores, particularly those with little or no produce display prior to the new WIC standards, reported having to purchase a cooler or at least devote more refrigeration space to produce. In one setting, state-specific WIC requirements to stock fruits and vegetables are relatively high, and several store owners reported a lot of waste initially.

Another common concern was that store owners now had to go out more frequently to restock produce:

There wasn't much change, but I have to go a little more frequent. ... like I get it from Sam's Club, so I used to go out for candies and whatever things I run out, so then now I started going for fruits and vegetables, but when we run out so it's like I have to go a little more frequently than before.

(New Haven area, P16)

Whole wheat bread—According to store owners, customer acceptance of whole wheat bread was high, following a period of adaptation. As one store owner remarked,

I see that they are actually buy-, taking more of that wheat bread. A lot of them are taking more of that wheat bread. At the beginning they were like “Oh, I don't want the wheat bread!” ... But, the wheat bread is what they tell you, you have to get.

(New Haven area, P13)

Despite this, store owners reported at least 2 significant challenges in stocking whole wheat bread. The first was perishability, and the second concern was having a reliable supplier. These 2 issues are intertwined. Some small store owners reported that their relationships with suppliers soured and sometimes failed when whole wheat bread did not sell – forcing the supplier to take back the expired bread.

In many respects, the ease of coping with the WIC package revisions appeared to have depended considerably on whole-saler/distributor(s) who serviced the particular small store. If the store's whole-saler already carried the new food at the time of the changed WIC package, supply problems were greatly reduced.

Many small store owners showed great flexibility in their use of suppliers for their stores. As one store owner remarked,

Sometimes the product will be out from the manufacturer. You have difficulty finding it anywhere, but again, you know, you go somewhere else. You try to hustle and buy it from (supermarket name) ... or whatever if they have it. You go ahead and get it from there. If they have it.

Discussion

The findings presented in this paper represent one of the first reports of acceptability of the new WIC packages by small store managers/owners. Interviews conducted with owners and managers of small, WIC-authorized food stores 6-12 months after the policy change went into effect in multiple settings around the United States revealed a generally positive response. Overall, store managers/owners felt the changes improved their stores and increased the number of customers, sales, and profits. However, they also reported initial challenges associated with implementing the package revisions. The most common challenges were obtaining a steady supply of perishable foods and explaining the new rules to WIC customers. Most small store managers/owners included in our sample overcame these initial challenges, a finding also reported in a Connecticut-based study.²⁵ Moreover, responses from vendors on the positive aspects of stocking and selling fresh produce are also consistent with the recommendation from IOM report that additional costs to the retailers could be outweighed by selling more high-margin groceries.¹²

Despite this evidence of resiliency and adaptation on the part of small store owners, it is important to realize that many small stores throughout the nation do not accept WIC – and so may not providing a range of healthy foods to their customers. Some of the challenges faced and overcome by our store owner/manager participants are quite possibly perceived as insurmountable by other small store owners.

We see several approaches for dealing with this issue. First, the findings from this study provide evidence that can be shared with WIC officials and owners of small stores. The evidence provided here is from 8 predominantly low-income urban sites around the nation, representing a diverse sample of experiences. Second, store owners/managers identified an important knowledge gap among their customers about the new WIC package regulations, specifically regarding eligibility of perishable foods (eg, types of milk and breads). This gap could be addressed through additional orientation and education when individuals receive their benefits and/or through appropriate educational materials at the point of purchase. Finally, there may be important opportunities for states, local governments, or other organizations to assist small food stores in partnering with distributors and/or establishing networks to ensure that they have access to the resources that would allow them to meet WIC stocking requirements without extensive burden.

This study has several limitations. We sought to understand acceptability of the new WIC packages primarily from the perspectives of store owners/managers. Future work should include interviews with WIC customers across a variety of geographic locales to assess their reactions to (and experiences with) the WIC package changes. In addition, we limited our interviews to store owners who had implemented the new package in their stores. Future work should be conducted with prior WIC vendors who chose to discontinue participation in

the WIC program. Our sample size in each site was relatively small, which did not permit us to explore intersite differences. A final limitation exists in the area of possible selection bias. In some of the sites, response rate was lower than 50%. This may mean we missed some of the stores facing the most adversity. On the other hand, our sample was diverse and included work in 7 states and in 3 different languages.

Response rates tended to be higher in settings where interviewers spoke the first language of the store owners/managers (Spanish, Korean). Response rates were lower in settings where English was used for the interviews, but the first language of store owners/managers was not English. Although we do not feel these differences led to bias in our findings, this does underscore the importance of using bilingual interviewers when working with small store owners/managers.

In conclusion, a qualitative study of small store owners revealed that the new WIC packages were found ultimately to be acceptable to these owners. Additional efforts should be undertaken to communicate the information and lessons learned from this study to other small stores that currently do not accept WIC, but that service low-income populations.

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References

1. Dietary Guidelines for Americans, 2010. Available at: <http://www.health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf>. Accessed August 20, 2011
2. Lutfiyya MN, Garcia R, Dankwa CM, et al. Overweight and obese prevalence rates in African American and Hispanic children: an analysis of data from the 2003-2004 National Survey of Children's Health. *J Am Board Fam Med.* 2008; 21(3):191-199. [PubMed: 18467530]
3. Ogden CL, Carroll MD, Curtin LR, et al. Prevalence of overweight and obesity in the United States, 1999-2004. *JAMA.* 2006; 295(13):1549-1555. [PubMed: 16595758]
4. Sharma A, Grummer-Strawn L, Dalenius K, et al. Obesity prevalence among low-income, preschool-aged children - United States, 1998-2008. *MMWR Morb Mortal Wkly Rep.* 2009; 58(28):769-773. [PubMed: 19629026]
5. Wang Y, Beydoun MA. The obesity epidemic in the United States-gender, age, socioeconomic, racial/ethnic, and geographic characteristics: a systematic review and meta-regression analysis. *Epidemiol Rev.* 2007; 29:6-28. [PubMed: 17510091]
6. Hoerr SL, Tsuei E, Liu Y, et al. Diet quality varies by race/ethnicity of Head Start mothers. *J Am Diet Assoc.* 2008; 108(4):651-659. [PubMed: 18375222]
7. Lorson BA, Melgar-Quinonez HR, Taylor CA. Correlates of fruit and vegetable intakes in US children. *J Am Diet Assoc.* 2009; 109(3):474-478. [PubMed: 19248865]

8. Kranz S, Mitchell DC, Smiciklas-Wright H, et al. Consumption of recommended food groups among children from medically underserved communities. *J Am Diet Assoc.* 2009; 109(4):702–707. [PubMed: 19328266]
9. Buchholz EM, Desai MM, Rosenthal MS. Dietary Intake in Head Start vs. Non-Head Start Preschool-Aged Children: results from the 1999-2004 National Health and Nutrition Examination Survey. *J Am Diet Assoc.* 2011; 111(7):1021–1030. [PubMed: 21703380]
10. US Department of Agriculture, Food and Nutrition Service, Nutrition Assistance Programs. [Accessed August 14, 2011] WIC program participation and costs. Available at: <http://www.fns.usda.gov/pd/wisummary.htm>
11. Oliveira, V.; Frazão, E. Edition, Economic Research Report No.73. 2009. U.S. Department of Agriculture, Economic Research Service; Apr. 2009 The WIC Program: Background, Trends, and Economic Issues.
12. Institute of Medicine (US) Committee to Review the WIC Food Packages. WIC food packages: time for a change. Washington D.C: The National Academies Press; 2006.
13. Code of Federal Regulations. Part II. Department of Agriculture. [Accessed July 2, 2011] Food and Nutrition service. 7 CFR 246. Special Supplemental Nutrition Program for Women, Infants and Children (WIC): Revisions in the WIC Food Packages: Interim Rule 2007. Available at: <http://www.fns.usda.gov/wic/regspublished/wicfoodpkginterimrulepdf.pdf>
14. Taylor J. Updating the WIC Food Packages: It's About Time. National Health Policy Forum. 2006; 816:1–14.
15. Cole, N.; Jacobson, J.; Nichols-Barrer, I., et al. U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis; Alexandria, VA: 2011. WIC Food Packages Policy Options Study. Available at: http://www.fns.usda.gov/ora/menu/Pub-lished/WIC/FILES/WICFoodPackageOptions_Summary.pdf [Accessed July 30, 2011]
16. Galvez MP, Hong L, Choi E, et al. Childhood obesity and neighborhood food-store availability in an inner-city community. *Acad Pediatr.* 2009; 9(5):339–343. [PubMed: 19560992]
17. Franco M, Diez-Roux AV, Nettleton JA, et al. Availability of healthy foods and dietary patterns: the Multi-Ethnic Study of Atherosclerosis. *Am J Clin Nutr.* 2009; 89(3):897–904. [PubMed: 19144728]
18. Larson NI, Story MT, Nelson MC. Neighborhood environments: disparities in access to healthy foods in the U.S. *Am J Prev Med.* 2009; 36(1):74–81. [PubMed: 18977112]
19. Neff RA, Palmer AM, McKenzie SE, Lawrence RS. Food systems and public health disparities. *Journal of Hunger & Environmental Nutrition.* 2009; 4(3):282–314. [PubMed: 23173027]
20. Gordon-Larsen P, Nelson MC, Page P, Popkin BM. Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics.* 2006; 117(2):417–424. [PubMed: 16452361]
21. Kumanyika S. Obesity, health disparities, and prevention paradigms: hard questions and hard choices. *Prev Chronic Dis.* 2005; 2(4):1–9.
22. Flournoy, R.; Treuhaft, S. [Accessed Oct 15, 2011] Healthy food, healthy communities: Improving access and opportunities through food retailing. Policy Link 2005. Available at: <http://www.policylink.org/atf/cf/%7B97C6D565-BB43-406D-A6D5-ECA3BBF35AF0%7D/HEALTHYFOOD.pdf>
23. Song HJ, Gittelsohn J, Kim MY, et al. Korean American storeowners' perceived barriers and motivators for implementing a corner store-based program. *Health Promot Pract.* 2011; 12(3):472–482. [PubMed: 20424001]
24. Gleason, S.; Mogan, R.; Bell, L.; Pooler, J. Impact of the Revised WIC Food Package on Small WIC Vendors: Insight From a 4-State Evaluation. Portland, ME: Altarum Institute; 2011.
25. Andreyeva T, Middleton AE, Long MW, et al. Food retailer practices, attitudes and beliefs about the supply of healthy foods. *Public Health Nutr.* 2011; 14(6):1024–1031. [PubMed: 21324231]
26. Laska MN, Borradaile KE, Tester J, et al. Healthy food availability in small urban food stores: a comparison of four US cities. *Public Health Nutr.* 2010; 13(7):1031–1035. [PubMed: 19968901]

Table 1
Small Store Recruitment by Site and Language of Interview

Study Site (City)	# Approached	# Refused (R) or Never Completed (NC)	# Completed (Response Rate, %)	Language of Interview
Baltimore, MD	10	R: 3	7 (70%)	4 English, 3 Korean
Chicago, IL^a	19	R: 8, NC: 4	7 (37%)	7 English
Minneapolis/St. Paul, MN	40	R:19, NC: 10	10 (25%)	10 English
New Haven (outlying towns), CT	15	R:8	7 (47%)	7 English
New Orleans, LA	6	R: 2	4 (67%)	4 English
Oakland, CA	19	R: 13	6 (32%)	3 English, 3 Spanish
Philadelphia, PA	19	NC: 14	5 (26%)	5 English
San Diego, CA	11	NC: 3	6 (55%)	4 English, 2 Spanish
Total			52	44 English, 5 Spanish, 3 Korean

Note.

^aMost WIC clients in the City of Chicago are served by WIC food centers, rather than retailers. Thus, interviews for the Chicago site were conducted with WIC vendors in an immigrant neighborhood in Chicago and low-income, predominantly African American municipalities located within 15 miles of Chicago.

Table 2
Perceived Benefits and Challenges of New WIC Package

	For Store Owner/Managers	For Customers
Benefits	Increased number of customers	Customers happy about increased selection
	Increased profits and sales	Healthier foods available for customers
	Improved store atmosphere	Convenience – one stop shopping in small stores
Challenges	Maintaining a steady supply of perishable foods	Understanding the new guidelines
	Having reliable relationships with suppliers of required foods	Some customers disappointed with restrictions of allowable items (eg, whole milk)
	Explaining the new guidelines to customers	

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