

Korean American Storeowners' Perceived Barriers and Motivators for Implementing a Corner Store–Based Program

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Based on substantial formative research, the authors developed and implemented a year-long corner store–based program in East Baltimore focusing on Korean American (KA) stores. To understand acceptability of the intervention by storeowners, the authors examined the motivating factors for program participation, barriers to program implementation, perceived effectiveness of intervention materials, and perceptions about the program. Data collection methods included in-depth interviews with seven corner store owners, field notes by interventionists, and a follow-up survey. Stores varied considerably in terms of owners' perceptions about the program, supportive atmosphere, and acceptability of intervention strategies. The storeowners who showed strong or moderate support for the program were more likely to sustain the stocking of promoted foods such as cooking spray and baked or low-fat chips after the program was completed as compared to less supportive stores. The level of support and active participation of storeowners can greatly influence the success of corner store–based nutrition interventions.

Keywords: *corner stores; nutrition intervention; Korean American merchants*

Corner stores are a predominant food source in low-income urban communities and are frequently characterized by less availability of healthy foods, higher prices, and often tense relationships with community residents (Antin & Hora, 2005; Brown, 1999; Chang, 1999; Krupa, 2001; Lee, 2002). The lack of access to healthier foods has many consequences for low-income community residents, including a heavy toll on their health (Morland, Wing, & Diez Roux, 2002; Morland, Wing, Diez Roux, & Poole, 2002). Although the majority of store–based interventions have focused on supermarkets (Cummins, Petticrew, Higgins, Findlay, & Sparks, 2005; Seymour, Yaroch, Serdula, Blanck, & Khan, 2004; The Food Trust, 2005; Wechsler, Basch, Zybert, Lantigua, & Shea, 1995), corner stores have emerged recently as a potential venue for nutrition interventions in the midst of “food deserts.” A food desert is an area with little or no retail food stores that sell healthy foods, forcing community residents without their own transportation to shop at small stores paying inflated prices (Beaumont, Lang, Leather, & Mucklow, 1995). In 2008, the Food, Conservation, and Energy Acts were passed, and the

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U.S. Department of Agriculture's (USDA's) Economic Research Service has undertaken initial planning for the implementation of the Food Desert Study to improve the retail food environment (USDA, 2009). In spite of the urgent need to modify the urban food environment, only a few corner store-based nutrition interventions have been reported (Bolen & Hecht, 2003; Duggan, 2004).

Urban corner stores are dynamic places with great variation in store features, community demands, and the capacity to meet community needs (Song et al., 2007). For successful corner store-based interventions, it is critical to understand fundamental issues such as what motivates storeowners, what intervention strategies are feasible, and how corner store owners perceive such programs. To our knowledge, studies exploring the perspectives of corner store owners are relatively recent, with just a couple of exceptions (Fuller, 2006; Steenhuis, Assema, & Glanz, 2001).

In Baltimore City, the majority of corner stores are owned by Korean Americans (KAs), and the estimated number of KA merchants ranges from 1,000 to 2,000 (<http://www.kagromd.com/>). Of these, about 750 KA merchants are Korean American Grocers Association (KAGRO) members and about 70% of the members operate small retail food stores or other food service establishments (such as takeaways). Therefore, KA-owned corner stores may be a feasible venue to increase the availability of healthier foods in low-income

urban areas. If successful, a KA corner store program will serve as a model for other small KA-owned food stores in the United States and Canada, where 23,000 nationwide KA merchants comprise 11% of all retail grocery outlets (Maryland Advisory Committee, 2004). Furthermore, in the United States, the majority of KA-owned corner stores are concentrated in low-income urban areas (<http://www.kagromd.com/>), and thus the approach used in the present study is potentially relevant to other small stores owned by specific ethnic groups.

In 2005-2006, we developed and implemented a corner store intervention (Gittelsohn et al., 2009; Song et al., 2009). As part of this work, we explored the receptivity of small store owners to the intervention. This article reflects on that experience and addresses the following questions: (a) What motivates storeowners to participate in a corner store program? (b) How was the intervention implemented in each store? (c) What factors were associated with storeowners' level of support related to their perceptions of program effectiveness, acceptance of intervention strategies, perceived barriers to participation, and sustainability of promoted food stocking? The present study was designed to provide information that future studies can build on, ultimately leading to the development of an intervention model that would work with urban food stores.

► **METHOD**

Baltimore Healthy Stores Intervention

To plan a sustainable community-based nutrition intervention targeting low-income African Americans (AAs) in Baltimore city, substantial formative research was conducted. A variety of methods including interviews, workshops, and focus groups were used to assess the diet and food purchasing and preparation behaviors of AA customers and the food stocking status in corner stores. Part of the formative research findings and a description of the intervention components of this research have been published elsewhere (Gittelsohn et al., 2007; Gittelsohn et al., 2009). This article aims to depict and understand the storeowners' perspective, whereas the formative research published earlier focused heavily on the consumer perspective. The conceptual frame that guided both formative research and the feasibility trial is based on social cognitive theory (Bandura, 1986), which combines environmental, individual, and behavioral components. The theory is applied in the context of the current study to explain the dynamic interplay among customers, storeowners, and the food environment. An aim of the Baltimore Healthy Stores (BHS) program

is to improve the local food environment by increasing the availability and accessibility of healthy foods. Customers' food purchasing and consumption patterns are influenced not only by intrapersonal factors such as food-related knowledge, taste preferences, and convenience but also by the availability of healthy food options in local stores. Storeowner-related factors include perceived profit and barriers, which are greatly influenced by customers' food purchasing and consumption patterns. Food availability at wholesale stores and vendors are environmental factors for both customers and storeowners that directly and indirectly affect food availability at corner stores.

The BHS corner store intervention was developed and implemented with the primary aims of improving the availability of healthy foods at corner stores in a low-income area of Baltimore City and promoting these foods at the point of purchase. The program took place in East and West Baltimore from January to October 2006. The median household income in these areas was about \$17,000 to \$18,000 compared to \$30,000 in Baltimore City. The majority of residents in these areas are AAs (www.baltometro.org). The BHS intervention consisted of five phases; each phase lasted for 2 months and had a specific theme focusing on the promotion of certain healthy foods and behavior. Within the stores, a variety of intervention materials, including posters, shelf labels, and educational displays, were used to promote healthy foods at points of purchase. The program was implemented by trained interventionists. A total of 13 interventionists implemented a 10-month intervention. Several interventionists were assigned to each store. They visited each store at least two times in a month. Their primary role was to conduct taste tests and cooking demonstrations and interact with customers to deliver a brief nutrition message at the point of purchase using several intervention materials. They also interacted with the storeowners to encourage them to stock the promoted healthy foods. To standardize the quality of intervention, the interventionists completed a 1-day training session and were provided a detailed manual of procedures. More detailed information related to the intervention implementation is available elsewhere (Gittelsohn et al., 2009; Song et al., 2009).

Intervention Strategies for Storeowners

The intervention strategies for corner stores included four main components.

Promoted food incentives. To minimize the potential of financial risk to the stores and to cover initial stocking costs, a small monetary incentive (\$50) or a small amount of the promoted foods were given to the stores

in each intervention phase. During formative research, we learned that the corner store owners most frequently used wholesale stores designed for business owners, wholesale stores designed for the public, vendors, or supermarkets for stocking their stores. As an incentive to stock the promoted foods and to minimize their financial burden, gift cards of the most preferred store was provided to the storeowners for selected phases.

Nutrition education training. A nutrition education session was delivered to the storeowners in Korean by the author to improve storeowners' nutrition-related knowledge and to increase their awareness of the importance of stocking and promoting healthy foods.

Cultural guidelines. Twelve cultural guidelines were developed to help storeowners build better relationships with AA customers and minimize conflicts due to cultural differences, misunderstanding, and language barriers. Simple but essential guidelines, such as "Make eye contact and engage in small talk" and "Ask regular customers what they would like you to stock and get those items," were included.

Corner store guidelines. We provided corner store owners with encouragement and practical guidelines on the types of foods to be stocked and the places where customers could easily access those healthy foods. Examples of these guidelines included "Put healthy foods where the customer can easily see them" and "Make a special place for promotional foods." The guidelines were presented to the storeowners as laminated posters, and the storeowners were asked to display the posters in a manner that made them noticeable.

Intervention Strategies for AA Customers

In-store materials. Posters, educational displays, and flyers: Theme-oriented posters were displayed in intervention stores during each intervention phase to increase customers' awareness of promoted foods. Interventionists also used interactive educational displays and flyers when they conducted taste tests and cooking demonstrations in the stores. Shelf labels: Low-sugar, low-fat, and high-fiber healthy-choice shelf labels were placed under the respective promoted healthy foods to help customers locate such foods.

Taste tests and cooking demonstrations. The interventionists invited customers to participate in taste tests and cooking demonstrations to try out healthy foods, encourage them to purchase and consume, or try those preparations at home. The frequency of these sessions varied with store size.

Incentives and giveaways. Incentive cards or coupons were distributed to customers in each intervention phase. Food samples and theme-related giveaways were also distributed to customers to draw their attention to the promoted foods. For example, during the healthy-beverage phase, we distributed water bottles.

Store Recruitment and Research Instruments

We collaborated with the Maryland Korean American Grocers Association (MD KAGRO) to recruit local KA corner stores in East and West Baltimore. The MD KAGRO provided a letter to facilitate store recruitment. After the letters were sent out to corner stores in East and West Baltimore, the first author visited small stores to provide further information. Because this study was a feasibility trial with limited resources and timeline, we limited the number of stores participating in the program in each area to 8 to 10. A combination of quantitative and qualitative methods including in-depth interviews, field notes, and store visit evaluation forms were used to gain insight into the storeowners' perceptions of the program.

1. In-depth interviews: In-depth interviews with seven corner store owners in East Baltimore were conducted by the first author, a native Korean. Interview questions were largely open ended (e.g., "Tell me your general impressions about the project." "What motivated you to participate in the program?"). The interviews were digitally recorded with the permission of interviewees and lasted approximately 60 to 90 min each. In-depth interviews were transcribed verbatim in Korean and translated into English. Data were read repeatedly to understand the context of decision making and to identify key themes.
2. Field notes: BHS staff field notes were used to provide additional information focusing on the extent to which the intervention activities were supported by the storeowners and how well the program was implemented. These field notes were taken whenever the interventionists and process evaluators visited each intervention store: a minimum of two to four times per intervention phase (Gittelsohn et al., 2009). General observations, feedback from storeowners, inquiries and recommendations from customers, and uncommon events that occurred during the intervention were described in detail.
3. Store visit evaluation: An assessment was conducted about 6 months after the intervention in the seven participating stores to check the current status of promoted food stocking.

Data Analysis

The storeowners were categorized into three groups: Strong Support, Moderate Support, and Weak Support—according to their support of the program based on factors such as their level of involvement in intervention activities, compliance with the intervention protocol, and perceived comfort of program staff (Table 1). Involvement in intervention activities was based on how enthusiastically the storeowner supported the BHS program by, for example, providing enough space to conduct intervention activities in appropriate locations so that customers can be easily approached, they themselves interacting with their customers to encourage customers to participate in the activities. Compliance with the intervention protocol indicated how well the storeowners followed the intervention protocol for stocking promoted foods, participating in nutrition education, and placing intervention materials correctly in the stores. Perceived comfort of program staff was assessed using the field notes taken by interventionists and process evaluators. For example, factors such as whether the program staff was welcome in the stores and how comfortably they could communicate or interact with the storeowners was considered. Of the seven participating corner store owners, two were rated as strong compliers with the protocol, three moderate, and two weak. Plus (+) or minus (–) values were used for each factor to indicate how supportive the storeowners were of the program (Table 1).

Key themes from in-depth interviews and field notes were compared across the three support levels. The qualitative data were analyzed in Korean using the constant comparative method (Boeije, 2002) and findings were translated into English. Representative quotes were selected to provide consensus of the storeowners at each support level. All research was approved by the Johns Hopkins School of Public Health institutional review board and signed consent was obtained from all storeowners.

► RESULTS

Motivators for Participating in the Program

Among seven corner store owners, three reported that they decided to participate in the program because the store recruitment was led by the author who had the same cultural and ethnic background as they did.

Frankly, I agreed to participate in the program because you (author) asked me. I had no idea whether participating in the program would be good or bad. If

TABLE 1
Storeowner Level of Support Based on Active Involvement in Intervention,
Compliance With Intervention Protocol, and Perceived Comfort of Program Staff

<i>Store Category</i>	<i>Strong Support</i>		<i>Moderate Support</i>			<i>Weak Support</i>	
	<i>CS 1</i>	<i>CS 2</i>	<i>CS 3</i>	<i>CS 4</i>	<i>CS 5</i>	<i>CS 6</i>	<i>CS 7</i>
Involvement in intervention	++	++	++	++	+	--	-
Compliance with intervention protocol	++	++	+	-	++	--	+
Perceived comfort of program staff	++	++	++	++	+	--	-

NOTE: CS = corner store. Support levels: ++ = very strong; + = strong; - = fair; -- = weak.

an American asked me to participate, I wouldn't understand what the program was, didn't know what to do. Probably I would have said "no" because I wouldn't understand.

Other motives for participation were related to the perceived positive impact and goals of the program such as "The program has good intentions," "I expect our customers would be interested in the program," or "to learn something for my store or myself." The storeowners did not mention directly that the monetary incentives for the stores motivated them to participate in the program, but they agreed that the incentives would be helpful to recruit stores for the future.

***Program Implementation at the Stores:
From the Interventionists' Perspectives***

The quality of program implementation varied significantly by the level of support provided by the storeowner. Strong or Moderate Support storeowners not only assisted intervention activities in their stores but also maintained a good relationship with interventionists.

The storeowners put up an empty packet of baked potato chips next to the healthy snacks poster to let the customers see what we were promoting and this will be very helpful in the future. (interventionist describing a Strong Support storeowner)

Even with her limited English, she was trying her best to convince customers to stop at my intervention table on the way out. She would point towards me and the water bottle and try to move them in my direction. (interventionist talking about a Moderate Support storeowner)

One Weak Support storeowner expressed explicit concerns about shoplifting and the interruption of their business. The storeowner gave interventionists very

detailed instructions regarding intervention activities, such as "Interact with children only when they are accompanied by their parents" and "Distribute samples when they are out." The storeowner's requests often restricted active intervention activities by limiting the scope of interventionist's work.

Successful interventionists who earned the storeowners' trust and drew more support from the stores were very agile in catching the store's atmosphere and interacting with customers whereas less successful interventionists tended to be inattentive to the storeowners' requests.

An interventionist gave food samples to some children, who went and got all their friends. It made the storeowner angry since she warned the interventionist to give the sample only when they accompany their parents. The storeowner declared that while kids would eat anything free they would not buy the foods. (process evaluator talking about a less successful interventionist)

Four additional factors (store layout, baseline stocks of targeted healthy foods, storeowners' perceived relationship with customers, and space for intervention) of the stores were also presented (Table 2). The level of storeowner support was also associated with other store characteristics. For example, Strong and Moderate Support storeowners were more likely to have an open store layout, good relationship with customers, and better healthy food stocking status at baseline compared to Weak Support storeowners.

Storeowners' Perceived Effectiveness of Intervention Strategies

Although Strong Support storeowners tended to have a more positive impression about the intervention materials compared to Weak Support storeown-

TABLE 2
Store Characteristics

	CS 1	CS 2	CS 3	CS 4	CS 5	CS 6	CS 7
Store layout ^a	+	++	++	-	-	-	--
Baseline healthy food stocking	++	++	++	+	-	+	--
Storeowners' perceived relationship with customers	+	++	+	++	+	+	-
Space for intervention (anteroom, enough in-store space)	-	+	++	-	++	+	++

NOTE: CS = corner store. Support levels: ++ = very strong; + = strong; - = fair; -- = weak.

a. Layout: ++ = totally open stores; + = open; - = closed; -- = totally closed.

ers, their perceived effectiveness of intervention materials depended on the store layout. The stores with more open and adequate space preferred posters whereas the stores with limited space voted for shelf labels. Four of seven storeowners responded that posters were the most effective intervention material and two stores reported that shelf labels were the most effective.

Those materials seem to be effective to advertise the program. In fact, there were some people who wanted to buy the posters. (Strong Support storeowner's quote on posters)

One day, a new customer just came into the store asking whether we have fruits. I think she just saw the poster ("We Have Fruits" poster) on the door. I also like it. Often my customers gave some positive comments on those." (Moderate Support storeowner's quote on the posters)

Customers didn't even look at it. (Weak Support storeowner's comment about the posters)

It appeared that culturally appropriate artwork played a role not only in attracting the target population of customers but also served as an effective communication tool between storeowners and customers. In general, shelf labels were less likely to catch customers' attention at some corner stores because promoted foods were stocked on shelves that were beyond the easy reach of customers. All storeowners agreed that flyers were the least effective.

Strong or Moderate Support storeowners reported that food sample giveaways were better accepted than other giveaways such as chip clips and water bottles. Compared to incentive cards, which were not well accepted by customers, coupons were moderately used by customers.

Giveaways are supposed to attract people but are not directly related to the program, I guess. Food sample giveaway is much better. When sample chips are given, they eat them anyway. They also take small package of condiments. I think they like it. (Strong Support storeowner's quote on food samples)

Food samples worked well. Even some children asked me when would be the next time they (interventionists) will come to the store. (Moderate Support storeowner on food samples)

Interventionist would be the one who knew about this. I have no idea about it since I didn't watch carefully, but it didn't seem to be effective. (Weak Support storeowner commenting on food samples)

Acceptability of Intervention Strategies for KA Storeowners

The intervention materials targeting KA storeowners themselves were well accepted by participating storeowners, although there were some variations in acceptability according to the level of storeowner support. Strong and Moderate Support storeowners were more likely to accept the guidelines positively whereas Weak Support storeowners were less confident in following them. Nevertheless, all storeowners considered the guidelines with caution.

All of these guidelines are very good. But sometimes, there are things you don't catch since you are not here all the time. (*The storeowner read the guidelines and laughed loudly, questioning*) Do not watch your customer? Even though I have surveillance cameras; I can't catch all of the shoplifting. One day, a man came into the store, opened the cooler, grabbed soda, and then ran away. Still, do I have to not watch my customer? (Strong Support storeowner)

We know how to welcome our customers. However, we often forget about that. I think these materials will remind me of that. (Moderate Support storeowner reported)

We'd better not participate in the program. (a Weak Support storeowner mumbled)

Providing the guidelines seemed to give her some emotional pressure that she should follow the guidelines. (interventionist mentioned about Weak Support storeowner)

The nutrition education sessions with storeowners went well in all stores, except when there were frequent interruptions on account of customers or other tasks that needed their attention. Although the purpose of the nutrition education was to improve their food-related knowledge so as to help them sustain healthy food stocking for their customers, most storeowners tended to interpret the nutrition information in the context of their own dietary patterns.

Since my children are getting health education at school, they know how to read food label. So, when we go to shop, we read nutrition labels before purchasing. I also learned something from the project. For example, our family usually tries to follow healthy diet habit, but I didn't know that mayo is also high in fat. (Moderate Support storeowner)

Incentives such as gift cards and promoted foods were given to the stores before each intervention phase. In general, the incentives were well accepted, although some storeowners seemed to be reluctant to accept the incentives, a customary gesture to express courtesy among Koreans.

Merchants like us are very sensitive to making a profit. We prioritize our business over everything. So, if you have enough budgets, incentives will motivate stores to participate in the program. (Strong Support storeowner)

Although mentioning the monetary incentives during the recruitment phase was effective, it was not associated with increased stocking of promoted foods during the intervention. Some storeowners reported that they didn't use the gift cards to purchase promoted foods. One reported, "The promoted foods were not available at the wholesale store where I (storeowner) frequent. Going to supermarkets to purchase the promoted foods was cumbersome."

I purchased and stocked promoted foods using the gift card you gave me last time! I don't know whether it's OK to receive the gift card often. (Strong Support storeowner exclaimed)

I gave the gift card to my husband, but he didn't seem to pay attention to stocking promoted food. (Moderate Support storeowner)

We don't need it (gift card) at all because the things being asked to stock are the ones that customers don't purchase. (Weak Support storeowner)

Perceived Barriers to Program Participation

Perceived barriers to program participation mainly included limited store space, less effective interventionists, and interruption of store business but were independent of the storeowners' level of support. Although Weak Support storeowners were more likely to voice their concerns, Strong Support storeowners also had issues with program participation.

It is a big concern how to manage (watch carefully) customers rather than business itself. When interventionists come to the store and talk with customers, it distracts the store business. (Strong Support storeowner)

Businesses are disrupted by intervention activities, and some interventionists are not able to differentiate valuable customers who have the buying power from the rest, as they tend to interact with any customers who walk in, including children. Giveaways attract people. It makes the store crowded but that doesn't mean they will buy something. (Weak Support storeowner)

Storeowners' Perceptions About the Program

In general, a majority of participating storeowners agreed that the community would benefit from the program, and it would work better if continued for a longer period of time.

If this program is continued . . . at first, it may not work well, but if pursued in a persistent manner, they (customers) will understand (the benefit of the program). Twenty-three years ago, no corner stores sold water. When we started selling water, they mocked and laughed at us. Now water has become one of our popular beverages. (Strong Support storeowner)

On the other hand, Weak Support storeowners were likely to doubt the program's effectiveness and showed indifference toward their customers.

Since customers don't care (about the program), we don't know. They do not belong to high social class, so they don't mind their diet. (Weak Support storeowner)

Most storeowners perceived that the program was neither good nor bad for their store. The storeowners reported that they received few responses from customers about the program and only a subgroup of customers showed interest in the program. The storeowners appeared to evaluate the effectiveness of the program intuitively based on customers' comments or responses.

There seems to be no apparent program effect, but it has become known to many people. There are some customers who start looking for wheat breads and low-sugar cereals. I've never sold wheat bread, but now I stock it! (Strong Support storeowner)

I think customers are aware of the program, but have had no interaction with us. They did interact with interventionists. (Moderate Support storeowner)

Customers are not allowed to come into the store. We just exchange things through the revolving door. We don't know what they think (about the program). (Weak Support storeowner)

Some storeowners attributed the lack of customers' responses to low education or low socioeconomic status.

I think this program is really good, but customers' responses are not that apparent. This program might result in better responses and outcome if conducted in predominantly White communities because they have better education. (Moderate Support storeowner)

If they (customers) ask questions and show interests about their diet or food, we may think they try to find and eat good foods. But no one seems to care. (Weak Support storeowner)

In assessing the feasibility, there were stark differences by the level of storeowner's support. Strong Support storeowners reported that the program was feasible to some extent because it helped community members and was manageable at the stores. In contrast, Weak Support storeowners responded that the program would not be effective by stating, "Although customers know that healthy foods are good for them, they would not be able to maintain their healthy diet in the long run anyway" or "there is no differences since the same people come to the same store."

Sustainability of Promoted Food Stocking After Intervention

The level of storeowner support for the program was moderately associated with promoted food stocking status at follow-up 6 months after the end of the program. Of the two stores owned by Strong Support storeowners, promoted food stocking at follow-up was improved in one store. This store stocked both cooking spray and baked and low-fat chips, neither of which was available at baseline. Furthermore, the storeowner said that they now stock the baked chips on a regular basis. In the other store once owned by a Strong Support storeowner, the promoted food stocking status deteriorated at follow-up because the store was taken over by a new storeowner. Although this particular store changed owners, they showed consistently strong support and demonstrated significantly improved food stocking at postintervention.

Among the three stores owned by Moderate Support storeowners, one showed significant increase in promoted food stocking. Compared to baseline, this store stocked four additional promoted healthy foods at the 6-month follow-up. The remaining four stores, two of which were owned by Moderate Support storeowners and two owned by Weak Support storeowners, showed no significant change in promoted food stocking status from baseline to follow-up.

DISCUSSION AND CONCLUSION

The findings of this study provide key insights into developing corner store-based nutrition interventions in urban communities by revealing the perspectives of corner store owners. Previous store-based nutrition interventions have mainly focused on consumers without considering the storeowners' point of view (Curran et al., 2005; Jeffery, Pirie, Rosenthal, Gerber, & Murray, 1982; Levy, Schucker, Tenney, & Mathews, 1985; Carson, Lansing, & Mullis, 1992). Storeowners' perspectives are crucial because they are in a position to tailor their merchandise to meet the needs and preferences of the community and to mediate access to healthy foods (Flournoy & Treuhaft, 2005). In this study, the storeowners reported that they were motivated to participate in the program because the author with the same cultural and ethnic background led the store recruitment, the program had "good intentions," and it was expected to result in positive outcomes for the stores. Although the storeowners did not express it overtly, provision of monetary incentives appeared to play a role as a covert motivator. Following Korean tradition, explicit mention of money is considered inappropriate. That may explain why

storeowners did not report monetary incentives as a motivator.

The storeowners varied significantly in their level of acceptance and participation in the program. Strong and Moderate Support storeowners had a more positive attitude toward the community and the program whereas Weak Support storeowners were likely to perceive the program negatively. The level of storeowner support was also associated with the overall quality of program implementation (Gittelsohn et al., 2009). Thus, ways to increase storeowners' motivation and to encourage them to get actively involved in the program should be developed.

The present study suggests the potential of intervention strategies for corner store owners to help ensure continued stocking of healthy foods. Corner store owners risk losing profit when they stock new products because of limited shelf space, slow turnover, and the uncertainty of customers' demand for the new products (Alwitt, 1997; Flournoy & Treuhaft, 2005). The program provided the participating stores with gift cards as incentives to reduce financial loss and motivate the storeowners to stock healthy promoted foods. However, the use of incentive varied according to the support level of the stores. The Strong Support stores were more likely to use the incentives actively, resulting in increased healthy food availability at the stores. Further, the storeowners felt a psychosocial burden related to promoted food sales. Therefore, it is important to address both the possible financial risk and the psychosocial burden caused by the pressure of marketing promoted foods. Another key intervention strategy the storeowners can benefit from is the nutrition intervention. When the storeowners view themselves as a beneficiary of the program, the effectiveness of a program can be maximized. To make the nutrition education session more effective and acceptable, the training needs to be delivered in short, frequent sessions throughout the program before each intervention phase rather than in one relatively long session. This will help address the time constraints of storeowners and increase the retention of nutritional information. Ultimately, nutrition education is to help storeowners understand the importance of stocking of healthy foods for the community and would be more effective if combined with financial and technical assistance to improve program acceptability (Flournoy & Treuhaft, 2005).

Regardless of the level of storeowner support, intervention activities were viewed as one of the barriers to program participation as the storeowners were concerned about shoplifting during such activities. Watson and Kwan (1999) also reported that the biggest

challenges small corner store owners confront are shoplifting and vandalism. The skill level of interventionists is a critical factor in minimizing such concern and determining program effectiveness. For successful program implementation, interventionists must be trained well and should be encouraged to coordinate intervention activities with storeowners, use limited store space effectively, and be alert to storeowners' business-related concerns while not compromising intervention activities. During the formative research, we pilot tested several intervention strategies and developed the roles of interventionists at both supermarkets and corner stores. In spite of substantial formative research, one intervention issue, for example, standardizing the quality of interventionists, has not been thoroughly addressed. The lesson learned during the present study should be addressed in future full-scale trials. Intensive training workshops for interventionists should be conducted to train them on ways to interact with both storeowners and customers, initiate intervention in store settings, and encourage storeowners to stock and promote healthy foods. If the intervention is successfully implemented, then the storeowners can sustain the stocking of the healthy foods without further support from the interventionists. The ultimate aim of the intervention strategies was to initiate the demand and supply of healthy foods. And our evidence indicates that once this cycle is set in motion, storeowners will be willing to continue to stock and promote healthy foods for their customers. The sustainability of the promoted healthy food stocking was assessed as a primary outcome after 10 months' intervention and its results are reported somewhere else (Song et al., 2009).

All participating storeowners agreed that the program would have a positive impact on the community food environment or even that it would be more beneficial for the community if the program was continued for a longer duration or delivered first in stores that accept WIC checks. Compared to Strong Support storeowners, Weak Support storeowners tended to underestimate the ability of their customers to change their diets. However, this negative view could be overcome by improving the communication between storeowners and their communities, as shown in other corner store-based intervention programs (Bolen & Hecht, 2003; Duggan, 2004).

The study had several limitations. Because the data were collected from a small number of corner stores, the generalizability of information is limited. Although KA-owned corner stores are predominant in Baltimore City, there is a growing number of corner stores owned by other ethnic groups for whom our findings may not be applicable. In addition to storeowner perception,

customers' perceptions about the program should also be explored to achieve the goals of a nutrition intervention trial in an urban community. In this study, the sample of seven grocers is hardly large enough to categorize the stores into three groups. The storeowners, however, showed large differences in terms of compliance with the intervention protocol, their interaction with the interventionists, and their ability to stock the promoted foods so that we were able to categorize them into three groups. Identifying the unique characteristics of the storeowners in each category would be useful in planning future corner store-based interventions.

In spite of these limitations, our findings have important implications for future nutrition interventions in urban area. The unique contribution of this study is to understand the urban food environment and community-based nutrition interventions from the corner store owners' standpoint and to explore potential barriers and possible solutions for corner store-based interventions. Although there has been tremendous interest recently in findings ways to modify the food environment (Morland, Wing, & Diez Roux, 2002; Morland, Wing, Diez Roux, & Poole, 2002; Beaumont, Lang, Leather, & Mucklow, 1995), relatively little descriptive work is available on the many small food store owners who are expected to implement these initiatives. Furthermore, on the basis of the findings of the present study, the original program is being expanded to more than 25 corner stores throughout Baltimore City. The BHS program can be scaled up to other KA corner stores in urban areas. The fundamental approach of our program as well as materials can be modified to suit the needs of other ethnic minority communities in inner cities.

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