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ORIGINAL RESEARCH

Using Community Indicators to Assess Nutrition in Arizona-Mexico Border Communities

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Abstract

Introduction

Community indicators are used to measure and monitor factors that affect the well-being of a community or region. Community indicators can be used to assess nutrition. Evaluating nutrition in communities along the Arizona-Mexico border is important because nutrition is related to an individual's risk of overweight or obesity; obesity is a risk factor for developing type 2 diabetes.

Methods

Local grocery store purchases were selected as a community indicator for nutrition. A structured 26-question interview was developed and administered to grocery store managers in communities along the Arizona-Mexico border that were targeted by the Border Health Strategic Initiative, a program implemented by community groups and the University of Arizona. In addition, data from milk distributors serving the border communities were collected.

Results

Residents of these communities favor food items with a higher fat and higher caloric content. This trend held across several food categories. Major barriers to customer acceptance of healthier food items include lack of knowledge concerning healthy foods and their prices.

Conclusion

The demand for healthy food items is relatively low along the Arizona-Mexico border. Interventions should continue to target this population with the aim of changing dietary patterns as one method of improving the health of the community and preventing and controlling diabetes.

Introduction

Type 2 diabetes has placed a substantial burden on the health and well-being of communities along the U.S.-Mexico border. Several factors place this area at a higher risk of diabetes, including economic disadvantages and a predominantly Hispanic population (1,2). Fifteen percent of Mexican-American children are overweight, and 29% of Mexican-American adults are classified as obese; overweight and obesity are risk factors for type 2 diabetes (2). Current estimates suggest worsening trends in the development of diabetes and its complications (3).

The Border Health Strategic Initiative (*Border Health ¡SI!*) was a comprehensive diabetes prevention and control program launched in October 2000 with a focus on border communities along the Arizona-Mexico border (4). As the program was implemented, it became clear that the comprehensiveness of the community-wide intervention required a range of indicators to gauge the status of the program. Although the border communities studied have relatively small populations, the study team decided that measuring individual-level indicators would be difficult

and prohibitively expensive. We opted for the more practical, less expensive approach of examining community-level measures (5). Other investigators have used this approach to evaluate community-based interventions, including interventions focused on improving nutrition (6). The approach offers the opportunity to collect, evaluate, and present data on the status of community nutrition in a timely manner.

This paper describes the development of a grocery store survey as a community indicator for nutrition in border communities along the Arizona-Mexico border and reports survey results. The survey was designed to measure the types of food items purchased by community residents at local grocery stores. Although several community indicators were selected, only indicators for nutrition are reported here.

Methods

This grocery store survey was conducted as a component of a larger effort to identify and measure community indicators for nutrition within the communities targeted by *Border Health ¡SI!*. To make the process of identifying community indicators representative and sensitive to local issues, we enlisted the help of community-based special action groups (SAGs) from each community (7). Selection of community indicators was guided by criteria developed by *Border Health ¡SI!* investigators, and these criteria were based on investigators' prior experience working with communities along the U.S.-Mexico border. The first criterion was that the community indicator should focus on topic areas targeted by *Border Health ¡SI!*. The second criterion was that the indicator should be practical — it needed to be relatively easy to measure and simple to understand by lay members of the community. The third criterion was that the indicator should be relevant to the unique needs of each community in preventing and controlling diabetes. A fourth criterion was that the indicator should take into account the two-year duration of *Border Health ¡SI!*. The plan called for providing measurement results to SAGs early enough during the two-year period to allow SAG members to develop policies on encouraging physical activity and proper nutrition based on survey results. A fifth criterion was that the indicator should be "portable" so that it could be used as a model by other communities.

Although we were interested in collecting information on all types of food items, we placed greater emphasis on food items for which community members have a clear choice between higher and lower saturated-fat content (e.g., whole milk compared with low-fat milk) or between higher and lower total caloric content per serving (e.g., regular soda compared with diet soda). We selected these items to serve as a gross measure of community member preferences. In addition, the items were being addressed in ongoing *Border Health ¡SI!* interventions.

We defined the following food items as healthy (most are lower-fat, lower-calorie alternatives to other items): low-fat yogurt, ground turkey, Equal®, low-fat mayonnaise, skinless chicken, olive oil, 100% orange juice, Sugar-Free Jello®, low-sodium salt/salt substitute, skim milk, whole-wheat bread, lean ground beef (<10%–15% fat), diet soda, sugar-free candy, canola oil (lower in saturated fat compared with corn oil), margarine (lower in saturated fat compared with butter), and whole-grain cereal (compared with sugar-based cereal).

Initially, we attempted to collect information on food items purchased by community residents directly from grocery stores. Several obstacles prevented this strategy, however. First, some grocery stores refused to provide the data because of corporate policies prohibiting the disclosure of proprietary sales data. Other grocery stores agreed to participate conceptually; however, when the time came to begin extracting the data, they no longer were able to participate because of the resources required to extract and assemble the data. We decided to conduct interviews of grocery store managers for the following reasons: 1) grocery store managers are most familiar with the data we sought, 2) the managers are accessible, and 3) interviews would require minimal grocery store resources.

We developed a structured interview to collect information from community grocery store managers. To develop the instrument, including selection of appropriate food items, we consulted with 1) *Border Health ¡SI!* investigators who had extensive experience working with border communities, 2) community health workers from each community, and 3) SAG members from each community. In addition, we visited all the grocery stores to select healthier food items that were stocked in at least some of the grocery stores. We pilot-tested interview questions with two individuals who had prior experience as grocery store managers in the target communities. The final inter-

view instrument contained 26 questions. The questions were divided into four categories in which respondents were asked to 1) describe the types of products purchased within food categories; 2) rate the demand for specific healthy food items (the first 11 items in the list above, from low-fat yogurt through whole-wheat bread); 3) compare the demand for less healthy food items with healthier alternatives; (the rest of the items in the list above) and 4) describe perceived barriers to the purchase of healthy foods by customers. A copy of the structured interview (English and Spanish versions) is included in Appendix A.

We identified grocery store managers from all the grocery stores in the communities targeted by the *Border Health ¡SI!* and approached them in person to ask them to participate in the survey. All the targeted communities are located on the border or within 12 miles of the Arizona-Mexico border. A strict definition of what constituted a grocery store vs other types of stores that sell food items (e.g., convenience store) was not used because the distinction was clear in these communities. A research associate administered the questions, which were intended for the grocery store manager or an equivalent staff member with knowledge of the types of products that are purchased within the store. Each interview took approximately 35 to 45 minutes to complete. Interviews were conducted between March and May 2003. We gave respondents a token gift (e.g., notepad holder, gift certificate) for their participation. We analyzed and summarized responses for each category of questions and used descriptive statistics to analyze the ratings. This study was approved by the Institutional Review Board at the University of Arizona.

In addition to conducting interviews, we attempted to collect data on food-item sales from wholesalers or distributors. We collected data on milk distribution only. We contacted dairy distributors that serve southern Arizona to obtain cross-sectional data on the proportion of different kinds of milk — whole milk, 2% milk, 1% milk, and skim milk — distributed to the targeted communities. To avoid proprietary issues, we did not collect data on volume and dollar sales. We collected data on other major cities in Arizona for reference purposes.

Results

A total of eight grocery store managers agreed to participate out of 11 possible stores. Six of the stores were in communities located on the border and two were in communities located 10 to 12 miles from the border. Six respondents had resided in the communities where the stores were located for a mean of 28.2 years (SD = 14.9). Respondents had been in their current positions for a mean of 6.7 years (SD = 6.1).

Table 1 shows manager ratings of the demand for specific healthy foods on a scale of 1 to 10, with 10 representing highest demand. Four items were rated as having "some demand." Orange juice was rated as having the highest demand, with a mean rating of 3.5. The lowest ratings were for ground turkey, low-fat mayonnaise, and low-sodium salt/salt substitutes. When we asked managers to compare the demand for various food items, responses were consistent with the trend favoring less healthy food items.

When we asked managers to rate the demand for healthy foods in the community (scale of 1 to 10), the mean rating was 6.6 (SD = 2.2). Most managers considered the demand to be low to moderate, whereas a few considered it to be very high. One manager noticed that customers were becoming more health-conscious, but they also noticed that customers did not necessarily translate their interest into healthier purchases. This manager recounted an incident in which a customer asked for "light lard" — clearly, no such item exists. Other respondents felt that their customers, on average, had no idea about healthy foods.

When asked to consider hypothetical scenarios in which specific food items were removed from their stores, respondents indicated that the removal of lard would generate the most negative response from customers. Some managers said there would be a "small riot" in their store if the product was removed. All managers stated that customers would notice immediately if the product was not stocked in the store. In contrast, most managers stated that nobody would notice if sugar-free candy was removed from the store; only one manager stated that customers would notice immediately and would begin requesting the item again. Only one manager stated that customers would not notice if olive oil was removed from the store. The remaining managers stated that very few people would notice that the product was missing. Two managers expected to receive requests for the product within the same day it was removed from store. The remaining managers expected to start receiving requests within one to four weeks of remov-

ing the product. When asked about the removal of lean ground beef (<10%–15% fat), responses were mixed. Half of the respondents indicated that customers would not notice, mainly because customers make purchases based on price, and lean ground beef is more expensive than regular ground beef. Respondents stated that if lean ground beef was on sale, customers would then definitely notice that it was missing. Three respondents stated that customers would notice if it was removed from their store because there is demand for it, and customers would request the product within a day.

When asked to directly compare the demand for two products, the trend favoring less healthy items persisted. Between regular soda and diet soda, all but one manager stated that regular soda had a much greater demand. One respondent stated that the demand for regular and diet soda was equal. Between corn oil and canola oil, five respondents stated that the demand for corn oil was greater; two respondents indicated that the demand was equal. Managers offered several explanations for why demand for corn oil dominates demand for canola oil: there are large in-store displays for corn oil, customers lack knowledge and experience with canola oil, and corn oil is less expensive. Interestingly, a previous survey of grocery stores participating in this survey found that the price for corn and canola oils was almost always equal, particularly for the generic brands. Between whole milk and low-fat milk, all respondents indicated that the demand for whole milk was much greater. Between butter and margarine, responses were split — half stated that they sold more butter, and half stated that they sold more margarine because it was less expensive. Between whole-wheat and sugar-based cereals, all respondents indicated that the demand for sugar-based cereals dominated whole-wheat cereals. The ratio of products sold ranged from 2:1, favoring sugar-based cereals, to almost no whole-wheat cereals sold.

Managers named two barriers to customers purchasing healthier foods. First, managers stated that customers did not have sufficient knowledge about nutrition to even recognize a food alternative that is healthier than what they normally purchase. Managers noted the need for customers to be educated about proper nutrition. Second, managers stated that the price of healthier food items was a major barrier. To increase sales of healthier food items, they needed to be priced more competitively, particularly for individuals with lower socioeconomic status.

Table 2 shows the proportion of different kinds of milk purchases in the targeted communities — whole milk, 2% milk, 1% milk, and skim milk. Phoenix, Tucson, and Yuma are larger cities in Arizona that are included for comparison. Communities in closer proximity to the border appear to be associated with a preference for higher-fat milk.

Discussion

The results of this study suggest that residents living along the Arizona-Mexico border have a preference for food items that are less healthy. For food items such as milk or cooking oils, customers preferred items that were higher in saturated fat compared with those with less saturated fat. Among food items such as beverages and cereals, customers preferred food items with a higher caloric content than those with a lower caloric content (e.g., regular soda compared with diet soda). The difference in preference between a healthier food item and a less healthy alternative was often dramatic. For communities along the U.S.-Mexico border, which are increasingly burdened with chronic diseases such as diabetes and cardiovascular disease, these findings suggest worsening health problems in the future unless unhealthy dietary patterns are curbed.

The results of this study are consistent with previously published research on this topic. In a study similar to this one, Wechsler et al evaluated the availability of low-fat milk among 276 grocery stores and supermarkets in an urban Latino community (8). They found that lower-fat milk was available for purchase in up to 96% of stores; however, it only constituted 15% to 37% of milk sales. The authors noted that lower-fat milk was more difficult to locate in areas that were poorer and had a higher concentration of Latino residents, but it was available in the majority of stores. These findings are similar to the results found in the current study: the closer the proximity to the border, the greater the preference for milk with a higher fat content. Lack of knowledge about lower-fat milk and culturally shaped attitudes about the fat content of milk were listed as potential contributors to these findings (9,10). Other studies using individual-level measures of food intake have found that, on average, Mexican-Americans maintain unhealthy diets compared with other groups (10). Mexican-American children have been found to 1) exceed recommended fat servings and have a higher percentage of energy intake from saturated fat, 2)

consume less than half of the recommended daily intake of fruits and vegetables, and 3) consume more soft drink beverages compared with other ethnic groups (1,11).

Our results have two practical applications within the border communities studied. One, the study provides baseline data for communities to begin evaluating the nutritional intake of the entire community. The SAG in each community can create an immediate forum for these data. As the communities continue to implement prevention and control programs, the structured interview designed for this study can be readministered to gauge progress. For many communities, especially those in rural or border settings, community-level data is extremely difficult to obtain because of lack of infrastructure. Conducting a structured interview of grocery store managers is a simple and inexpensive way to obtain these types of data. Two, the grocery store manager survey can be useful in identifying key factors that encourage or inhibit good dietary habits. For example, managers consistently mentioned two barriers to customer acceptance of healthier food items: price and lack of knowledge. Interview respondents pointed out the impact of price on the types of food items that customers will purchase. Because many residents have a lower socioeconomic status, they are often more concerned with buying enough food to feed their families than with looking for healthier alternatives. Thus, putting an item on sale can have a big impact on whether it will sell; this was suggested as a potential strategy to improve sales of healthier food items. For some food items, however, price was not an issue. For example, healthy alternatives for milk and cooking oils were available at the same price as less healthy choices. Yet customers still preferred to buy the less healthy alternative (e.g., whole milk, corn oil). This finding is consistent with the second barrier: lack of knowledge of healthier food items.

Educating customers about healthier alternatives through in-store demonstrations and food sampling was suggested by respondents. Previous research has demonstrated that prompting, product sampling, and price reduction can produce modest increases in customer purchases of food items that have a lower-fat content (12). And, in fact, this approach has been used in grocery stores in the targeted communities. Whether this type of intervention will produce measurable changes in the types of food items purchased in these communities remains to be determined.

Several limitations concerning the use of the grocery store manager survey to obtain data on nutritional intake among community residents deserve mention. First, this approach used grocery store manager responses as a proxy for community residents' preferences for food items. The results could have been influenced by recall bias or other factors inherent within each respondent. However, these individuals are responsible for maintaining their store inventory, and they are most likely to be the best available source of data (other than actual sales data).

Second, we assumed that purchases at grocery stores reflect actual food consumption within each community. Previous researchers have used similar approaches to measure community-wide behavior (13). For example, store-level measures have been found to be significantly correlated with individual-level measures of food consumption within communities (6,14-16). However, using these types of measures to track dietary changes in communities over time is tenuous at best (17). Hence, using this approach is only likely to capture major shifts in putative changes in food availability at the community level; smaller, incremental changes occurring in the community will probably not be detected.

A third limitation is that it is impossible to link a specific intervention to the results obtained from this survey, especially in these communities. Shifting community-level dietary patterns takes time and involves a variety of factors. Thus, it is impractical to think that a single intervention will result in a measurable change. The other reality in these communities is that multiple entities (e.g., local, state, and federal agencies) may be implementing interventions that target these communities, thus threatening the internal validity of any experimental or quasi-experimental research design. For this reason, the focus of this evaluation was to obtain the best available data on the putative changes in these communities and not to be overly concerned with attributing the effect to any one particular program.

Fourth, these results are only generalizable to communities that were targeted by *Border Health ¡SI!*. However, the survey instrument and methodology should be useful to other border communities facing similar data needs.

In conclusion, the findings of this study indicate that the demand for healthy food items is relatively low along the Arizona-Mexico border. Interventions should continue to

target this population with the aim of changing dietary patterns as one method of improving the health of the community. This survey should be administered in future years to measure whether or not there has been a change in the community concerning the types of food items that customers prefer.

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References

1. Trevino RP, Marshall RM Jr, Hale DE, Rodriguez R, Baker G, Gomez J. Diabetes risk factors in low-income Mexican-American children. Diabetes Care 1999;22(2):202-7.
2. U.S. Department of Health and Human Services. Healthy people 2010. Understanding and improving health and objectives for improving health. Washington (DC): U.S. Government Printing Office; 2000.
3. Bray GA. Medical consequences of obesity. J Clin Endocr and Metab 2004 June;89(6):2583-9.
4. Cohen SJ, Ingram M. Border heath strategic initiative: overview and introduction to a community-based model for diabetes prevention and control. Prev Chronic Dis [serial online] 2005 Jan.
5. Cheadle A, Wagner E, Koepsell T, Kristal A, Patrick D. Environmental indicators: a tool for evaluating community-based health-promotion programs. Am J Prev Med 1992; 8(6):345-50.
6. Wagner EH, Koepsell TD, Anderman C, Cheadle A, Curry SG, Psaty BM, et al. The evaluation of the Henry J. Kaiser Family Foundation's Community Health Promotion Grant Program: design. J Clin Epidemiol 1991;44(7):685-99.
7. Meister JS, de Zapien JG. Bringing health policy issues front and center in the community: expanding the role of community health coalitions. Prev Chronic Dis [serial online] 2005 Jan.
8. Wechsler H, Basch CE, Zybert P, Lantigua R, Shea S. The availability of low-fat milk in an inner-city Latino community: implications for nutrition education. Am J Public Health 1995; 85(12):1690-2.
9. Wechsler H, Wernick SM. A social marketing campaign to promote low-fat milk consumption in an inner-city Latino community. Public Health Rep 1992;107:202-7.
10. Dow RM. Culture, language differences responsible for low skim-milk consumption among Hispanics. J Am Diet Assoc 2001;101(11):1312.
11. Cullen KW, Ash DM, Warneke C, de Moor C. Intake of soft drinks, fruit-flavored beverages, and fruits and vegetables by children in grades 4 through 6. Am J Public Health 2002; 92(9):1475-8.
12. Paine-Andrews A, Francisco VT, Fawcett SB, Johnston J, Coen S. Health marketing in the supermarket: using prompting, product sampling, and price reduction to increase customer purchases of lower-fat items. Health Mark Q 1996;14(2):85-99.
13. Curry SJ, Wagner EH, Cheadle A, Diehr P, Koepsell T, Psaty B, et al. Assessment of community-level influences on individuals' attitudes about cigarette smoking, alcohol use, and consumption of dietary fat. Am J Prev Med 1993; 9(2):78-84.
14. Fisher BD, Strogatz DS. Community measures of low-fat milk consumption: comparing store shelves with households. Am J Public Health 1999;89(2):235-7.
15. Cheadle A, Psaty BM, Diehr P, Koepsell T, Wagner E, Curry S, et al. Evaluating community-based nutrition programs: comparing grocery store and individual-level survey measures of program impact. Prev Med 1995;24(1):71-9.
16. Cheadle A, Psaty BM, Curry S, Wagner E, Diehr P, Koepsell T, et al. Community-level comparisons between the grocery store environment and individual dietary practices. Prev Med 1991;20(2):250-61.
17. Cheadle A, Psaty BM, Curry S, Wagner E, Diehr P, Koepsell T, et al. Can measures of the grocery store environment be used to track community-level dietary changes? Prev Med 1993;22(3):361-72.

Tables

Table 1. Grocery Store Manager Ratings of Customer Demand for Healthy Food Items in Selected Communities Along U.S.-Mexico Border, Arizona, 2003[a]

Food Item	Mean (SD)
Low-fat yogurt	2.5 (1.2)
Ground turkey	1.5 (0.8)
Equal®	2.9 (1.2)
Low-fat mayonnaise	1.5 (0.5)
Skinless chicken	3.4 (0.9)
Olive oil	2.3 (0.9)
100% orange juice	3.5 (1.3)
Sugar-free Jello®	1.8 (0.9)
Low-sodium salt/salt substitute	1.5 (0.9)
Skim milk	1.8 (0.7)
Whole-wheat bread	3.1 (1.1)

[a]Respondents rated the demand for each food item on a 10-item scale with "10" being the highest.

Table 2. Proportions of Milk Purchases in Selected Communities Along U.S.-Mexico Border, Arizona, August 1, 2001–July 31, 2002[a]

	Whole Milk	2% Milk	1% Milk	Skim Milk
Phoenix/Tucson[b]	27	32	14	16
Yuma (City)[c]	64	20	8	8
Border community	89	11	--[d]	--[d]

[a]All values are percentages.
[b]Phoenix and Tucson are approximately 200 and 60 miles, respectively, from the U.S.-Mexico border. They are included for comparison purposes.
[c]Yuma is approximately 24 miles from the U.S.-Mexico border. It is included for comparison purposes.
[d]Amount was negligible compared with other categories.

Appendix

Appendix A. English and Spanish Versions of the Grocery Store Manager Questionnaires, Border Health Strategic Initiative, Arizona, 2003

Grocery Store Manager Questions (in English)

Thank you for participating in this interview. The purpose of this interview is to gauge the community's interest in purchasing different types of foods from the perspective of a grocery store manager/assistant manager. Please be assured that your identity and the identity of your store will be kept confidential. Your responses will be used solely for the purpose of evaluating the effect of health promotion activities of the Border Health Strategic Initiative in the community. Before I begin, do you have any questions about the interview?

Demographic

First, I have a few questions about you.

Q1. Are you a resident of the community?

Q1a. If so, how long have you lived in this community?

Q2. How long have you been a manager/assistant manager at this store?

Questions About Buying Patterns of Typical Customers by Food Categories

Q3. Within each of the following categories, how would you describe the types of products that the typical customer at your grocery store would buy?

a. milk (If they don't otherwise indicate, prompt for kind [1%] and amount.)

b. other dairy products (yogurt, ice cream, cottage cheese, cheese)
c. drinks (soda, juice, fruit drinks, . . . compared to milk?, probe for Kool-Aid®, Nestea®)
d. bread (sandwich bread, tortillas, bagels, etc)
e. meat (poultry, beef, pork, etc)
f. fruits/vegetables
g. cooking oils/manteca

Q4. What effect does price have on the selection of products in these categories?

Questions About Product Selection

Q5. The next few questions are about the types of food that people buy in your grocery store. Let's suppose that I am working for a major food manufacturer and I am trying to position the following products in your store. Also, assume that you currently do not stock this item in your store. What would the demand be for each of the following products based on what you know about the types of products that the typical customer would buy at this store?

Use the following scale to answer each question:

1	2	3	4	5
Very Little Demand	Little Demand	Some Demand	Much Demand	Very Much Demand

Follow-up each question with:

Why?
How could the demand for this product be increased?

a. low-fat yogurt
b. ground turkey
c. Equal®
d. low-fat mayonnaise
e. skinless chicken
f. olive oil (greater than 32-ounce size)
g. 100% orange juice
h. Sugar-Free Jello®
i. low-sodium salt/salt substitute
j. skim milk
k. whole-wheat bread

Questions About Product Consumption by "Healthy Food" Status

Q6. In the **last month**, how many **requests for these types of items** have you received from customers?

Q7. How about in the **last year**?

Q8. What were the items requested?

(If no answer, prompt the manager with certain items [e.g., skim milk, low-fat yogurt, etc.]).

Q9. Did you stock the item?

Q10. Did the item sell?

Q10a. Did you consider the item a "success" in terms of customer acceptance or sales?

Q11. When you stock a new item, how do you advertise the product?

Q12. Did you continue to carry the item?

Q13. Did you discontinue the item? If the item was discontinued, how long did you carry the item? (weeks, months, years . . . how many?)

Q14. On a scale of 1 to 10, 1 being nonexistent and 10 being very high, how would you rate the demand for **HEALTHY FOODS** in the community of San Luis, Ariz/Nogales, Ariz?

Product Removal/Addition Questions

Q15. If you removed the **LARD (MANTECA)** from the store shelf today, what response from customers would you expect?

Q15b. How soon would customers begin to request that product?

Q16. If you removed **SUGAR-FREE CANDY** from the store shelf today, what response from customers would you expect?

Q16b. How soon would customers begin to request that product?

Q17. If you removed **OLIVE OIL** from the store shelf today, what response from customers would you expect?

Q17b. How soon would customers begin to request that product?

Q18. If you removed **LEAN GROUND BEEF** (less than 10%–15% fat) from the store shelf today, what response from customers would you expect?

Q18b. How soon would customers begin to request that product?

Comparison of Demand for Food Products

Q19. How does the demand for **REGULAR SODA** compare to the demand for **DIET SODA**?

Q20. How does the demand for **CORN OIL** compare to the demand for **CANOLA OIL**?

Q21. How does the demand for **WHOLE MILK** compare to the demand for **LOW-FAT MILK**?

Q22. How does the demand for **CANNED VEGETABLES** compare to the demand for **FROZEN VEGETABLES**?

Q23. How does the demand for **BUTTER** compare to the demand for **MARGARINE**?

Q24. How does the demand for **WHOLE-WHEAT CEREALS** compare to the demand for **SUGAR-BASED CEREALS**?

San Luis, Arizona, Customers compared to San Luis, RC, Customers and Nogales, Arizona, Customers Compared to Nogales, Sonora, Customers

Q25. How would you compare the buying patterns of Mexico-based customers versus U.S.-based customers?

Q26. Which types of food differ?

Thank you for participating in this survey.

Grocery Store Manager Questions (in Spanish)

Gracias por participar en esta entrevista. El proposito de esta entrevista es establecer una medida de las diferentes comidas que se compran en su comunidad, bajo la perspectiva suya como gerente de un supermercado. Su identidad y la identidad de su tienda se mantendrán en confidencia. Sus respuestas se utilizarán solamente para evaluar la efectividad del programa Salud Fronteriza en promover actividades saludables en su comunidad. Antes de empezar, ¿tiene Ud. preguntas respecto a esta entrevista?

Demografía

Primeramente, tengo unas preguntas de Ud . . .

Q1. ¿Es Ud. un residente de esta comunidad?

Q1a. (Si la respuesta es sí) ¿Cuanto tiempo ha vivido en esta comunidad?

Q2. ¿Cuanto tiempo ha sido gerente/asistente gerente de esta tienda?

Preguntas sobre las categorias de comida que compra el cliente típico

Q3. Dentro de las siguientes categorias, ¿me puede describir las compras de comida de un cliente típico en su tienda?

a. leche (If they don't otherwise indicate, prompt for kind [1%] and amount.)
b. ostros productos lacteos (yogurt, nieve, cottage cheese, queso)
c. bebidas (soda, jugo, bebidas con sabor de fruta . . . comparado a la leche?, probe for Kool-Aid®, Nestea®)
d. pan (sandwich bread, tortillas, bagels, etc)
e. carne (pollo, res, puerco, etc)
f. frutas/vegetales
g. aceite para cocinar/manteca

Q4. ¿Que efecto tienen los precios en la selección de productos en estas categorias?

Preguntas sobre la Selección de Productos

Q5. Las siguientes preguntas son sobre los tipos de comida que sus clientes compran en su tienda. Supongamos que estoy trabajando para un fabricante de comidas y le traigo un producto para que lo surtan en su tienda. Tambien vamos a suponer que actualmente no surten este producto en su tienda. Según lo que conoce de las

compras de sus clientes, ¿que tanta demanda hubiera para cada uno de los siguientes productos?

Use la siguiente escala para responder a cada pregunta:

1	2	3	4	5
Muy poca demanda	Poca demanda	Alguna demanda	Mucha demanda	Muchisima Demanda

Follow-up each question with:

¿Porque? ¿Como se pudiera aumentar la demanda de este producto?

1. yogur bajo en grasa (low-fat yogurt)
2. pavo molido (ground turkey)
3. Equal®
4. mayonesa baja en grasa (low-fat mayonnaise)
5. pollo sin pellejo (skinless chicken)
6. aceite de olivo (botella de 32 onza)
7. jugo de naranja 100% natural (100% orange juice)
8. Jello® sin azucar (Sugar-Free Jello®)
9. substitutos de sal (low-sodium salt/salt substitute)
10. leche descremada (skim milk)
11. pan integral (whole-wheat bread)

Preguntas Sobre el Consumo de Productos Considerados 'Saludables'

Q6. En el **ultimo mes**, ¿cuantas peticiones recibió para un producto de este tipo de parte de sus clientes?

Q7. ¿Y durante el **último año**?

Q8. ¿Cuales productos le pidieron? (If no answer, prompt the manager with certain items [e.g., skim milk, low-fat yogurt, etc.])

Q9. ¿Surtieron esos productos?

Q10. ¿Se vendieron esos productos?

Q10a. ¿Se consideró el producto como un 'exito' en términos de ventas y aprobación de cliente?

Q11. ¿Cuando surten un artículo nuevo, ¿cómo anuncian ese producto?

Q12. ¿Siguieron surtiendo ese artículo?

Q13. ¿Dejaron de surtir esos productos? (Si dejaronde surtir algun producto 'saludable'), cuanto tiempo surtieron el artículo? (semanas, meses, años . . . que tantos?)

Q14. ¿En una escala del 1 al 10 (1 representa 'inexistente,' 10 representa 'muy alta'), como considera la demanda de **COMIDAS SALUDABLES** en la comunidad de San Luis, Arizona?

Product Removal/Addition Questions

Q15. ¿Si dejaran de vender **LARD (MANTECA)**, que clase de respuesta esperarían de sus clientes?

Q15b. ¿Qué tan pronto les pidieran sus clientes este producto?

Q16. ¿Si dejaran de vender **DULCE SIN AZUCAR (SUGAR-FREE CANDY),** que clase de respuesta esperarían de sus clientes?

Q16b. ¿Qué tan pronto les pidieran sus clientes este producto?

Q17. ¿Si dejarande vender **ACEITE DE OLIVO (OLIVE OIL),** que clase de respuesta esperarían de sus clientes?

Q17b. ¿Qué tan pronto les pidieran sus clientes este producto?

Q18. ¿Si dejaran de vender **CARNE MOLIDA BAJA EN GRASA (LEAN GROUND BEEF [less than 10%–15% fat])**, que clase de respuesta esperarían de sus clientes?

Q18b. ¿Qué tan pronto les pidieran sus clientes este producto?

Comparison of Demand for Food Products

Q19. ¿Cómo se compara la demanda de **SODA REGULAR** a la demanda de **SODA de DIETA**?

Q20. ¿Cómo se compara la demanda de **ACEITE DE MAIZ (CORN OIL)** a la demanda de **ACEITE DE CANOLA (CANOLA OIL)**?

Q21. ¿Cómo se compara la demanda de **LECHE ENTERA (WHOLE MILK)** a la demanda de **LECHE DESCREMADA (LOW-FAT MILK)**?

Q22. ¿Cómo se compara la demanda de **VEGETALES elatados (CANNED VEGETABLES)** a la demanda de **VEGETALES CONGELADOS (FROZEN VEGETABLES)**?

Q23. ¿Cómo se compara la demanda de **MANTEQUILLA (BUTTER)** a la demanda de **MARGARINA** (**MARGARINE)**?

Q24. ¿Cómo se compara la demanda de **CEREALES INTEGRALES (WHOLE-WHEAT CEREALS)** a la demanda de **CEREALES DULCES (SUGAR-BASED CEREALS)**?

San Luis, Arizona, Customers Compared to San Luis, RC Customers and Nogales, Arizona, Customers Compared to Nogales, Sonora, Customers

Q25. ¿Cómo se comparan las compras de clientes de Mexico a las compras de clientes de los E.E.U.U.?

Q26. ¿Cuáles comidas son diferentes?

Gracias por su participación.