



Facilitators and Barriers to Farmers' Market Use for WIC Clients

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Introduction

Obesity is one of the top chronic diseases in the United States affecting over 1 in 3 adults and 1 in 6 children (CDC, 2017). The consumption of fruits and vegetables has been shown to reduce the risk of obesity and obesity related diseases (Hung, 2004). However, low income populations have a lower consumption of produce compared to higher income populations (Kirkpatrick et al., 2012).

Public health efforts have targeted the promotion of increased fruit and vegetable consumption to improve our nations health by improving the access to farmers' markets for consumers (Cole, 2013). However, many barriers are still seen in the literature for low-income consumers to shop at farmers' markets to meet their produce needs including but not limited to, cost of produce, inconvenience, lack of knowledge about farmers' market and limited cultural acceptance.



Incentive and education programs have been established for farmers' markets to help improve their accessibility for low-income consumers. Specifically, the WIC Farmers' Market Nutrition Program (FMNP) was created to improve the awareness and use of farmers' markets to purchase fresh, local produce. The over 70 farmers' markets in LA county that accept FMNP benefits and regular WIC benefits, along with the education from WIC, may enhance more options for WIC mothers to access fresh produce year-round.

The purpose of this study was to explore the relationship between the perceived facilitators and barriers to farmers' market use for WIC mothers from the perspective of WIC dietitians and nutritionists. Specifically, it assessed how factors such as cost, convenience, cultural norms, marketing, perceived health benefits, nutrition education and assistance programs contribute to farmers' market use for WIC consumers. In addition, this study looked for relationships between these factors and credential of the WIC nutritionist and years in the position.

Methods

Convenient Sampling:

- 59 WIC dietitians and nutritionists from the PHFE WIC in Los Angeles County

Survey:

- 25 Likert Scale questions based off of a literature review
- Sent out via an in-house software program and active for one month
- Demographic questions: age, gender, race, employment credential, ethnicity

Analysis:

- Cronbach's Alpha used to test reliability of survey questions
- Spearman's Rho Correlation and t-test used to test hypotheses

Results

Top Facilitators:



Assistance Programs: WIC FMNP and the Market Match Incentive Program



Easy Access to Fresh Fruits & Vegetables



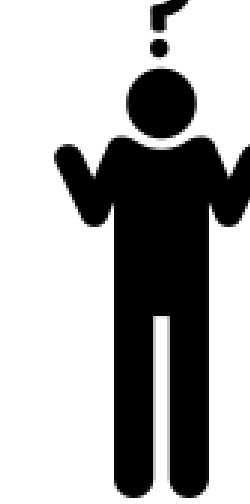
Enjoyable Environment to Interact with Friends and Family



Price of Fruits and Vegetables and Farmers' Markets



Lack of Transportation



Lack of Knowledge About the Available Foods at Farmers' Markets

Facilitators	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Easy access to fresh fruits and vegetables	1 (1%)	2 (3%)	4 (7%)	16 (27%)	36 (61%)
Affordable prices of produce	4 (7%)	11 (19%)	16 (27%)	6 (10%)	22 (37%)
Option to buy locally grown and/or organic	2 (3%)	3 (5%)	7 (12%)	23 (39%)	24 (41%)
Positive family environment to teach children healthy behaviors	1 (2%)	2 (3%)	10 (17%)	25 (42%)	21 (36%)
Enjoyable environment to interact with friends and family	1 (2%)	1 (2%)	5 (8%)	30 (51%)	22 (37%)
Contribution to healthy eating	1 (2%)	0 (0%)	7 (12%)	24 (41%)	27 (46%)
Information from WIC about location of farmers' markets	2 (3%)	1 (2%)	5 (8%)	23 (39%)	28 (47%)
Nutrition education through WIC about fruits and vegetables	3 (5%)	3 (5%)	4 (7%)	25 (42%)	24 (41%)
Developing cooking skills through WIC to prepare fresh produce	1 (2%)	4 (7%)	13 (22%)	26 (44%)	15 (25%)
FMNP \$20 summer checks	1 (2%)	0 (0%)	0 (0%)	12 (20%)	45 (76%)
Farmers' Market 'Market Match' Incentive Program	1 (2%)	1 (2%)	4 (7%)	9 (15%)	43 (73%)
Marketing and advertising outside of WIC about market location and operating hours	1 (2%)	4 (7%)	18 (31%)	21 (36%)	13 (22%)
Information of how to use WIC checks at farmers' markets	2 (3%)	1 (2%)	9 (15%)	21 (36%)	24 (41%)



$r(59) = -.245$,
 $p = .04$

Shorter employment at WIC → increased perception that the 'Market Match Incentive Program' facilitates farmers' market (FM) use

Longer employment at WIC → decreased perception that the 'Market Match Incentive Program' facilitates FM use

Barriers	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Price of fruits and vegetables at farmers' markets	2 (4%)	0 (0%)	8 (15%)	29 (53%)	16 (29%)
Limited selection of produce at farmers' markets	1 (2%)	16 (30%)	12 (23%)	18 (34%)	6 (11%)
Location of farmers' markets	2 (4%)	6 (11%)	13 (25%)	20 (38%)	12 (23%)
Operating hours of farmers' markets	2 (4%)	10 (19%)	11 (21%)	20 (38%)	10 (19%)
Lack of transportation to farmers' markets	1 (2%)	2 (4%)	9 (17%)	31 (58%)	10 (19%)
Limited parking available at farmers' markets	3 (6%)	4 (8%)	13 (25%)	20 (38%)	13 (25%)
Cultural/social mismatch between farmers' markets and WIC clients	2 (4%)	18 (34%)	15 (28%)	13 (25%)	5 (9%)
Lack of frozen and packaged goods	13 (25%)	24 (45%)	9 (17%)	6 (11%)	1 (2%)
Extra time it takes to shop at the farmers' market vs. grocery stores	1 (2%)	21 (40%)	11 (21%)	12 (23%)	2 (4%)
Not knowing that farmers' markets exist	2 (4%)	9 (17%)	6 (11%)	24 (45%)	12 (23%)
Not knowing which foods are available at farmers' markets	1 (2%)	7 (13%)	8 (15%)	32 (60%)	5 (9%)
Discomfort using WIC vouchers at farmers' markets	4 (8%)	14 (26%)	15 (28%)	14 (26%)	6 (11%)



$r(59) = -.297$,
 $p = .017$

Shorter employment at WIC → the more that employees perceived discomfort experienced at FM to be a barrier

Longer employment at WIC → the less that employees perceived discomfort experienced at FM to be a barrier

Discussion

Hypotheses 1&2 were rejected, as two weak correlations were found, shown above between employment length and those two specific facilitator and barrier. For hypothesis 3 & 4, no significant relationships were found between the subjects' employment credential (WIC RDN or WIC Nutritionist) and their perception of both facilitators and barriers for clients. Both the top facilitators and top barriers found confirm similar factors affecting farmers' market use for low-income population as found in the literature.

Interestingly, all of the facilitators ranged around neutral to strongly agree. Therefore, health professionals can keep all of these tools in mind when helping to make farmers' markets more accessible to consumers. Lastly, the barrier scores varied more based on the perceptions on the employees. For example, employees predominately scored 'strongly disagree' and 'disagree' that a 'Lack of frozen and packaged goods' at farmers' markets were a common barrier. This contradicts some previous research in which this was a major barrier for consumers. So, areas of improvement to focus on would include the top barriers shown above and the discomfort using WIC vouchers at farmers' markets, especially for new employees.

Conclusion

Potential ways to increase fruit and vegetable consumption through the use of farmers' markets based on this studies findings:

- Help consumers become aware of all transportation options including bus routes, carpooling and biking
- Inform consumers about farmers' markets close to their homes and work
- Explore incentive and benefit program applicable to the consumer, especially the FMNP and Market Match Program
- Educate clients on shopping in-season to save money through seasonal lists of produce and corresponding recipes
- Enlighten consumers about market hours and days of the week they are open

- Connect consumers with other consumers interested in attending markets to aid with transportation issues and help consumers feel more comfortable attending together

- Investigate smart phone applications available that can give information on farmers' market location, hours, etc.

- Teach consumers the proper cooking skills needed to prepare fresh produce

- Motivate consumers to want to incorporate more fruits and vegetable in to their diet and favorite recipes

In Conclusion:

- Similar facilitators and barriers to farmers' market use were found in this study as seen previously in the literature
- Consider the individual consumer, climate, farmers' markets available, cultural norms, assistance programs and nutrition education level when promoting farmers' markets
- Future research should consider studies including WIC consumers as participants among a wide range of climates from diverse communities across the country

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