

Optimizing Nutrition Education in WIC: Findings From Focus Groups With Arizona Clients and Staff

Yael Greenblatt, MS¹; Sofia Gomez, MPA³; Gayle Alleman, MS, RD¹; Karen Rico, BS¹; Daniel A. McDonald, PhD²; Melanie Hingle, PhD, MPH, RD¹

ABSTRACT

Objective: To understand staff and clients' experiences with delivering and receiving nutrition education in the *Special Supplemental Nutrition Program for Women, Infants, and Children* (WIC).

Methods: Focus groups involving WIC staff, clients, and former clients in Arizona. Client and staff perceptions of WIC nutrition education, preferences, and suggestions for improvement were examined. Transcripts were analyzed using a deductive thematic approach to identify emerging themes.

Results: Findings from 10 focus groups with 25 WIC staff and 29 clients suggested that existing materials were time-consuming and unresponsive to client needs, and additional resources were needed to engage children while parents were in session; new delivery formats for nutrition education, including videos and interactive demonstrations focused on child-friendly preparations of WIC foods, were preferred.

Conclusions and Implications: Collaboration among existing nutrition education programs, including *Supplemental Nutrition Assistance Program–Education*, *Expanded Food and Nutrition Education Program*, community gardens, and *Head Start*, can complement and enhance WIC nutrition educations in this region.

Key Words: food assistance, nutrition education, focus group, WIC (*J Nutr Educ Behav.* 2016;48:289-294.)

Accepted January 17, 2016. Published online February 13, 2016.

INTRODUCTION

A major goal of nutrition education within the *Special Supplemental Nutrition Program for Women, Infants, and Children* (WIC) is obesity prevention,¹ a significant public health problem disproportionately affecting low-income families.² Previous research demonstrated that nutrition education improved the nutritional status of WIC clients by significantly increasing family consumption of fruits, whole grains, and low-fat milk.³ Clients are required to attend a minimum of 2 nutrition education sessions (one-on-one or group format) every 6 months. A didactic instructional format, disproportionately focused on increasing knowledge without complementary behavior change strategies, remains the norm.⁴

However, client-centered education has been identified as one of the more promising nutrition education models for behavior change,⁵ prompting many states to discontinue didactic formats in lieu of facilitated discussions and hands-on activities.⁶ In theory, this shift from the instructor to the learner will empower clients to take responsibility for decisions that affect their lives, including choices related to nutrition and health.⁷

Several other WIC nutrition education approaches have been evaluated and are equally promising. For instance, Internet-based nutrition education has demonstrated beneficial effects on nutrition behavior and is well accepted by clients.⁵ Training WIC staff in motivational interviewing has helped personalize counseling ses-

sions to focus on clients' specific needs and has been shown to affect children's television and dietary behaviors positively.⁸ Cooking demonstrations and specific tips on healthy food preparation have increased clients' exposure to low-cost, healthy meals and have influenced mothers' consumption of fruits and vegetables.⁹

Despite modest successes of these newer formats of nutrition education, widespread implementation and dissemination of research-proven nutrition education have lagged. A top-down implementation and dissemination approach has been employed in which WIC client and staff perceptions of the adoption, use, and acceptability of the new or enhanced methods and materials were not considered. Abu-sabha et al¹⁰ advocated for the "power with" approach to community practice, in which educators work shoulder-to-shoulder with clients to understand their values, experiences, and challenges to co-develop a meaningful nutrition education experience. This "power with" approach may generate more effective nutrition outcomes than the current top-down dissemination model because it equitably involves all partners in the process.¹¹ Developing a nutrition education approach that is both relevant and useful to clients, as

¹Department of Nutritional Sciences, University of Arizona, Tucson, AZ

²Cooperative Extension, University of Arizona, Tucson, AZ

³Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ
Conflict of Interest Disclosure: The authors' conflict of interest disclosures can be found online with this article on www.jneb.org.

Address for correspondence: Yael Greenblatt, MS, Department of Nutritional Sciences, University of Arizona, 1745 E Glenn St, Apt 243, Tucson, AZ 85719; Phone: (847) 254-9235; E-mail: yaelg@email.arizona.edu

©2016 Society for Nutrition Education and Behavior. Published by Elsevier, Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jneb.2016.01.002>

well as feasible for WIC staff to deliver, should have the highest likelihood of producing and sustaining long-term behavior change.¹⁰

The purposes of this study were to understand the experiences of WIC staff and clients (current and former) with delivering and receiving nutrition education within the WIC setting, and to solicit feedback regarding its enhancement and improvement. Two research questions informed the researchers' approach: (1) What do clients and staff like and dislike about the current materials and format of WIC nutrition education? (2) What changes do clients and staff suggest to increase the effectiveness of WIC nutrition education?

METHODS

Focus Groups

The authors used focus group discussions to explore the perspectives of WIC clients and staff using a naturalistic approach¹² in an uncontrolled, context-specific setting. Two focus group scripts tailored for WIC staff and clients were developed by the research team to guide discussions. Scripts consisted of 11 to 12 open-ended, nonleading questions designed to elicit WIC staff and client experiences with nutrition education content, format, and delivery, and to encourage feedback regarding potential improvements or enhancements. Discussions were led by an experienced focus group moderator and trained graduate student. Probes and prompts were used to expand and clarify responses.

Participants

Eligible study participants were WIC staff who had previously delivered nutrition education to clients. The WIC clients were eligible to participate if they had received WIC benefits within the past 5 years. Participants were recruited from WIC clinics, neighborhood centers, and public libraries in Arizona, using promotional flyers posted to clinic walls and distributed via e-mail and verbal invitations issued by researchers. Study staff confirmed respondent eligibility and obtained informed consent. Participants were invited to attend a focus group on a specific date and time,

and received \$25 for participation. The University of Arizona Institutional Review Board approved the study.

Data Collection and Analysis

Ten focus groups were conducted: 4 discussions with current WIC clients (n = 21), 2 with previous clients (n = 8), and 4 with staff (n = 25). Smaller focus group size (n = 4–6 respondents) was intentional to provide adequate time for thorough discussion of all questions, thereby enhancing the quality of the data.¹³ Each focus group session lasted 60–90 minutes and was audio-recorded. Two students trained in qualitative research methods transcribed recordings verbatim and reviewed transcripts for completeness. The moderator of the focus group performed a second review. Transcripts were coded and analyzed by the entire research team using deductive thematic analysis,¹⁴ in which 1 researcher identified emerging themes by reviewing and coding each transcript based on repeated patterns across the data set.¹⁵ A second member of the research team, who was also present at the focus group discussions, independently confirmed emerging themes. The graduate student then analyzed and sorted codes and grouped them within themes. Direct quotes from transcripts were sorted into relevant themes. The NVivo qualitative data analysis software (version 10, QSR International Pty Ltd., Melbourne, Australia, 2014) was used to develop a hierarchical coding structure. Findings were discussed at meetings that included the entire research team.

RESULTS

Participant Characteristics

A total of 54 individuals participated in 10 focus group discussions (Table). Mean age of WIC staff was 42 years (range, 25 to ≥ 50 years), and 30 years (range, 20–44 years) for WIC clients. Six WIC staff members (24%) self-reported race/ethnicity as white, 15 (60%) as Latino/Hispanic, and 4 (16%) as mixed racial/ethnic status. Participants were female, except for 2 WIC clients and 3 WIC staff. Two of the 4 discussions with current WIC clients were with Nepalese-speaking individuals of Asian descent (n = 10 individuals); the other 2 were English-

speaking (n = 6), and Spanish-speaking (n = 5) individuals. The 2 group discussions with past WIC clients were in Spanish (n = 8).

The researchers did not intentionally recruit specific cultural groups. Arizona WIC serves diverse clientele, which afforded the opportunity to meet with clients representing different cultural groups, including Nepalese refugees. A Nepalese interpreter translated focus group questions to Nepali and back-translated participant responses to English. In addition, over one third of WIC clients in Southern Arizona are Hispanic.¹ Many speak only Spanish; thus, 1 focus group moderator was bilingual and conducted 3 of the focus groups with clients entirely in Spanish. The same moderator transcribed into Spanish and then translated into English. A second (bilingual) member of the research team present at the discussion verified transcripts.

Emerging Themes

Three major themes related to the delivery and format of WIC nutrition education were identified. Two emerged in response to the first research question: Unsupervised children negatively affect nutrition education, and educational materials are time-consuming and not applicable to clients' lives. These themes encompassed many of the challenges WIC staff experienced when using nutrition education materials with clients. Clients did not expressly focus their discussions on distractions during the education process, or the materials. Thus, these themes are largely staff-centric. A third theme emerged in response to the second research question: Methods of nutrition education that promote active participation are in demand. This theme encompassed the many suggestions for improving WIC nutrition education from the perspectives of WIC clients and staff.

Unsupervised Children Negatively Affect Nutrition Education

Across the 4 staff focus groups, participants agreed that unsupervised children interfered with and limited client engagement and benefit from nutrition education. The 4 WIC clinics in the sample had open floor

Table. Demographic Characteristics of WIC Staff and Clients Who Participated in Focus Group Discussions (n = 54)

Participant Characteristics	WIC Staff	WIC Clients	Past WIC Clients
Sample size ^a	25	21	8
Age, y			
Mean	42	28	32
Range	25 to ≥ 50	20–44	20–44
Race/ethnicity, n			
White	6		
Black	0	1	0
Asian	0	10	0
Latino/Latina or Hispanic	15	8	4
White, Latino/Latina, or Hispanic	4	1	4
Education, n			
No schooling	0	3	0
Less than high school	1	6	4
High school graduate	12	8	3
Beyond high school	7	3	1
Technical	5	0	0
Marital status, n ^b			
Single		3	1
Married		14	6
Separated, divorced, or widowed		3	0
Children living with participant (age ≤ 5 y), n ^b			
0		1	1
1		11	6
2		5	0
3		1	0
≥ 4		1	0

WIC indicates *Special Supplemental Nutrition Program for Women, Infants, and Children*.

^aCouples living in the same household filled out 1 demographic data form with female spouse as the focus of the survey; ^bMissing responses on some questionnaires.

plans composed of cubicles where counseling sessions were held. Staff reported that clients' children would frequently run out of the cubicles and interrupt nearby counseling sessions, which made it difficult to focus on nutrition education.

In one staff member's words,

Having children in the session is a big challenge. It's always hard to talk over them because they want their mom's attention. They're talking, playing, arguing.

Another WIC staff member agreed,

It's an open environment, so there's one client here and another client there, and if they both have kids, they are running up and down and moms are running after them, so they cannot continue with their interview.

WIC staff suggested placing doors on the cubicles to provide clients with more privacy and minimize distractions.

It would be so nice to have an area for them [kids] so they could just play and be secure in that area. Maybe that would be helpful for moms just to be able to relax and think, 'Okay, my children are in play land, let's talk about vegetables, or let's talk about healthy eating practices.'

Educational Materials Are Time-Consuming and Not Applicable to Clients' Lives

In 2003, the *Touching Hearts, Touching Minds* nutrition materials, including both handouts and tools (cards, fab-

ric, and faces made from paper), were developed by Massachusetts WIC. A greater behavior change is believed to occur when mothers feel good about what they do for their children; thus, these emotion-based materials emphasized the emotional benefits of healthy eating in addition to the rational, logical benefits of taking action.¹⁶ Handouts included personal stories from local WIC clients regarding strategies used to help their children engage in healthy behaviors, whereas the tools were designed to facilitate the nutrition counseling session. Adopted by Arizona WIC in 2012 as its statewide curriculum, the handouts and tools were not well accepted by WIC staff participating in the focus group discussions, who explained that clients desired quick facts, not lengthy stories that did not address clients' nutrition questions. Staff members further explained that some clients were not able to read the handouts owing to low literacy or language barriers.

In the words of 2 WIC staff members,

We do have handouts that we are supposed to use from the state, but we don't use them because they are general and not specific to what they [clients] want.

A lot of people want to take something home that's easy to read. They [the state] give us these handouts that are totally opposite of that. You have to read the handouts to dig for information.

With regard to the tools, a few staff members noted that they might be useful in the first session; however, the majority of staff members agreed that overall, the tools were too time-consuming and inhibited the natural flow of discussion. These same staff members thought the tools made it more difficult to build a rapport with clients and were unnecessary when staff had good communication skills.

As 1 staff member noted,

The handouts and tools take up too much time, and they are not always well received. I've gotten a couple of clients that say, 'Oh, since when did WIC become psychologists or counselors?'

Another staff member said,

It kind of feels robotic, where we are all trained to act and say things in a certain way. It doesn't feel natural. And it's just really lengthy using the tools and trying to get down to the matter.

Methods of Nutrition Education That Promote Active Participation Are in Demand

Clients were most interested in participating in active, hands-on nutrition education that taught them practical strategies to motivate their children to consume healthy food. The 2 main formats that clients suggested were videos and live food demonstrations.

Both staff and clients thought that viewing a video would be a quick, efficient, and engaging format for nutrition education. Clients were mostly interested in videos that provided guidance on foods for children, including simple recipes and child-friendly food presentation.

In the words of several clients,

Creative ideas on how to give vegetables and fruits to children. Making a happy face out of fruit to help kids eat.

Ideas for substitution of unhealthy food for healthier foods. I liked when they showed me how to substitute spaghetti squash for spaghetti, and cauliflower for mashed potatoes.

Staff suggested a WIC YouTube channel with access to videos to deliver nutrition education to clients both in and out of the clinic setting. Several staff members explained why videos might be a good option:

A lot of our clients don't read. A video would be so much better. That way they can hear and see [the information].

If there was WIC YouTube page, they could use it as a reference. It could be updated videos reminding clients about nutrition topics such as iron.

Both clients and staff commented on long wait times at the clinic, sometimes as much as 3 hours, and sug-

gested that nutrition education in the waiting room would make better use of wait time. Clients were particularly keen on opportunities that incorporated recipes and food preparation tips; however, staff did not identify food demonstrations as a desirable method of nutrition education.

As several WIC clients explained,

I think it is really hard to know what is healthy for my children. They don't like vegetables. A demonstration of what is healthy for our children would help.

Orient us every so often, like once in a month, and give a workshop as to what kind of food to feed to baby and how to keep food safe. It would also be helpful to see demonstrations like a healthy plate.

Collectively, these findings illustrated clients' desire to learn how to put nutrition recommendations into practice by seeing concrete examples in videos or in-person sessions rather than from a written handout. Staff members agreed that these methods would be more useful to clients because many had difficulty reading or preferred videos. The WIC clinic setting was perceived as a barrier to delivering and receiving effective nutrition education as a result of interference caused by unsupervised children. Long wait times may offer an opportunity to deliver nutrition education in clinic waiting areas.

DISCUSSION

Across 10 focus groups composed of WIC staff and current and past WIC clients, 3 themes emerged that warrant further action. The first 2, that unsupervised children influence nutrition education, and that educational materials are time-consuming and not applicable to clients' lives, were heavily focused on staff experiences with the emotion-based education materials. The third theme, methods of nutrition education that promote active participation are in demand, elicited clients' nutrition education preferences and staff perspectives regarding nutrition education delivery challenges occurring within the constraints of the clinic environment.

In contrast to a previous study conducted with Massachusetts WIC in

which emotion-based nutrition education materials were positively received by WIC clients and staff,¹⁶ participants in the current study thought these handouts and counseling tools were too time-consuming and unresponsive to client preferences. In part, this may be the result of cultural diversity in the current sample compared with the previous study's sample, which may influence how clients perceive the nutrition education materials.

Participants in this study suggested a variety of ways to enhance WIC nutrition education, including the use of on-demand video. This recommendation is consistent with findings from a previous study in which clients reported that watching videos on infant care and nutrition was useful and informative.¹⁷ In another study testing the effects of a culturally sensitive DVD on fruit and vegetable intake of overweight and obese black and white mothers in Michigan WIC,⁴ there were no significant differences between intervention and control participants (who were provided with usual WIC care and the option to receive a DVD at the end of the study). These null results, combined with the modest impact of similar technology-based approaches in WIC,^{4,5} may be due to the low dose of compulsory nutrition education (eg, 2 contacts every 6 months) and not the delivery approach per se.

Staff members suggested developing a WIC YouTube channel to connect clients to on-demand nutrition education accessible outside the clinic setting. The flexibility of this delivery method and potential for customization are responsive to clients' preferences for quick access to child-friendly recipes and food preparation tips. Internet access may be a barrier for some WIC clients; however more than 60% of low-income individuals have a high-speed Internet connection at home.¹⁸ Videos could also be streamed in the waiting area of WIC offices to maximize the frequently long wait times.

This research has several limitations. It is possible that the focus group setting may have inhibited some participants from freely sharing their views. After 1 of the WIC staff focus groups, a staff member disclosed the presence of the supervisor, which may have influenced the willingness

to share. Focus groups were conducted on weekdays, so working clients might be underrepresented. Furthermore, clients who agreed to participate in the focus groups may have differed in important ways from those who chose not to participate. Almost every staff member from each of the 4 WIC clinics volunteered to participate in the study outside work hours. This provided a well-balanced representation of WIC staff members' experience with nutrition education in Arizona WIC. The cultural diversity of the focus group participants, although fortuitous, was not by design. Thus the researchers were unable to explore whether culture or language served as a moderator of nutrition education uptake by WIC clients.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Across all 10 focus group discussions, participants expressed interest in healthy recipes and creative methods of food preparation for children. Cooking demonstrations and videos were favored formats to receive this information. To serve the multicultural WIC population better, it is important to consider the role of culture in the uptake and acceptance of nutrition education strategies. Best practices for serving multicultural WIC populations have been identified.¹⁹ Using these practices to optimize WIC nutrition education, essential elements include provision of cultural competency training to all WIC staff and the development or refinement of nutrition education materials and approaches that consider clients' cultural preferences, eating patterns, and traditions consistent with the cultural competency requirements.

The majority of WIC clinics in Southern Arizona do not appear to have adequate resources and funding to support the nutrition education needs of their clients, and the significant cost of implementing acceptable and culturally sensitive nutrition education may not be feasible for some states. Because of these circumstances, it is recommended that WIC take advantage of existing nutrition education programs and services that complement WIC's mission to maximize resources.

Organizational factors such as administrative policies and procedures, available resources, and facilities play a critical role in the effectiveness of nutrition education delivered to WIC clients.²⁰ Thus, optimizing WIC nutrition education can occur only with coordination among partner agencies including community gardens, food banks, and land-grant university Cooperative Extension offices.

Several states have already forged partnerships with existing organizations. In Illinois, WIC partnered with *Supplemental Nutrition Assistance Program-Education* and *Expanded Food and Nutrition Education Program* to provide WIC clients with cooking demonstrations featuring fresh produce.²¹ Initiating these types of collaborations in other states could address clients' desire for hands-on nutrition education, as well as leverage resources and personnel. Partnering with local community gardens and organizations that sell inexpensive fruits and vegetables, such as local food banks, is another approach to increasing clients' access to affordable fruits and vegetables.

Finally, because of clients' high level of interest in learning strategies to motivate their children to consume healthy foods and the competing challenge of occupying children's attention during the WIC nutrition education sessions, it may be important to include children in some of the nutrition education activities. For instance, both food demonstrations and community garden workshops could be structured to involve children. Collaboration with licensed childhood educators and early childhood education programs such as *Head Start* could yield developmentally appropriate activities designed to engage children in learning while WIC parents are in session. Focusing some or all of these activities on experiential learning around nutrition would be an excellent way for children to discover where fresh produce comes from and to learn to make healthy food choices.

ACKNOWLEDGMENTS

The authors acknowledge the Pima County Health Department for collaboration and support on this project, and clients and staff in Pima County

WIC. This work was supported by a University of Arizona Canyon Ranch Center for Prevention and Health Promotion Faculty Seed Grant.

REFERENCES

1. WIC needs assessment. Arizona Department of Health Services Bureau of Nutrition and Physical Activity Research and Development. http://www.azdhs.com/azwic/documents/local_agencies/reports/wic-needs-assessment-02-22-13.pdf. Accessed March 15, 2015.
2. Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA*. 2014;311:806-814.
3. California WIC association. WIC nutrition education supports behavior change. http://www.phfewic.org/projects/files/NWA_NEFPI_Brief2010.FINAL.pdf. Accessed January 10, 2015.
4. Chang MW, Nitzke S, Brown R. Design and outcomes of a mothers in motion behavioral intervention pilot study. *J Nutr Educ Behav*. 2010;42:S11-S21.
5. Bensley RJ, Brusik JJ, Anderson JV, Mercer N, Rivas J, Broadbent LN. [wichealth.org](http://www.wichealth.org): impact of a stages of change-based Internet nutrition education program. *J Nutr Educ Behav*. 2006;38:222-229.
6. Deehy K, Hoyer FS, Kallio J, et al. Participant-centered education: building a new WIC nutrition education model. *J Nutr Educ Behav*. 2010;42:S39-S46.
7. Isbell MG, Seth JG, Atwood RD, Ray TC. A client-centered nutrition education model: lessons learned from Texas WIC. *J Nutr Educ Behav*. 2014;46:54-61.
8. Lockner DW, Kibbe D, Marley SC, Trowbridge F. Get healthy together: a program to improve counseling for childhood obesity in community-based WIC clinics. *J Health Care Poor Underserved*. 2014;25:771-786.
9. Langenberg P, Ballesteros M, Feldman R, Damron D, Anliker J, Havas S. Psychosocial factors and intervention-associated changes in those factors as correlates of change in fruit and vegetable consumption in the Maryland WIC 5 a day promotion program. *Ann Behav Med*. 2000;22:307-315.
10. Abusabha R, Peacock J, Achterberg C. How to make nutrition education more meaningful through facilitated group discussions. *JAMA*. 1999;99:72-76.

11. Dzewaltowski DA, Estabrooks PA, Glasgow RE. The future of physical activity behavior change research: what is needed to improve translation of research into health promotion practice? *Exerc Sport Sci Rev*. 2004;32:57-63.
12. Krueger RA, Casey MA. *Focus Groups: A Practical Guide for Applied Research*. 3rd ed. Thousand Oaks, CA: Sage; 2000.
13. Wimmer RD, Dominick JR. *Mass Media Research: An Introduction*. 9th ed. Brief guide for conducting focus groups. <http://www.rogerwimmer.com/mmr9e/mmrfocusgroups.htm>. Accessed June 16, 2015.
14. Fereday J, Muir-Cochrane E. Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *Int J Qual Meth*. 2006;5:80-92.
15. Krueger RA, Casey MA. *Focus Groups: A Practical Guide for Applied Research*. 4th ed. Thousand Oaks, CA: Sage; 2009.
16. Colchamiro R, Ghiringhelli K, Hause J. Touching hearts, touching minds: using emotion-based messaging to promote healthful behavior in the Massachusetts WIC program. *J Nutr Educ Behav*. 2010;42:S59-S65.
17. Nestor B, McKenzie J, Hasan N, AbuSabha R, Achterberg C. Client satisfaction with the nutrition education component of the California WIC program. *J Nutr Educ*. 2001;33:83-94.
18. Horigan J. The numbers behind the broadband "homework gap." Pew Research Center's Internet and American Life. <http://www.pewresearch.org/fact-tank/2015/04/20/the-numbers-behind-the-broadband-homework-gap/>. Accessed June 16, 2015.
19. Agenor M, Callahan KP, Henchy G. *Making WIC Work for Multicultural Communities: Best Practices in Outreach and Nutrition Education*. Food and Research Outreach Center (FRAC); 2009.
20. Sigman-Grant M, Rye A, Loesch-Griffin D, Mitchell D. How to strengthen and enhance WIC nutrition education. *J Nutr Educ Behav*. 2008;40:317-321.
21. Illinois Nutrition Education Programs. All About EFNEP. <http://web.extension.illinois.edu/INEP/efnep.cfm>. Accessed March 15, 2015.

JNEB Award Winners

The *Journal of Nutrition Education and Behavior* (JNEB) recognizes authors and ad hoc reviewers for their contributions to the scientific literature, through their work with JNEB. Check out our awards page for the current and previous recipients of these awards:

Reviewers of Excellence

Platinum, Gold, and Silver Authors

Best Article Awards

Best GEM Awards.

<http://www.jneb.org/content/awards>

CONFLICT OF INTEREST

The authors have not stated any conflicts of interest.