2019 WIC Research Update

Georgia Machell, PhD
Senior Director, Research and Program Operations
National WIC Association

#NWAWLC19
Overview

• Why research is important to WIC
• NWA’s Research Priorities
• Who is doing WIC research?
• Vic Olivera & Xinzhe Cheng, USDA Economic Research Service - Economic Impact of Breastfeeding in WIC
• Summer Weber, Vanderbilt University Medical Center – Mobile Apps for WIC Participants
Why is research and evaluation important to WIC?

- Are we accomplishing our mission?
- Identify opportunities and challenges
- Advocacy

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National WIC Association
Objective: Identify research areas that support NWA and WIC programs nationwide to:
1. be responsive to emerging issues
2. continue to explore, demonstrate and integrate evidence-based practices that improve the health and well-being of low-income families

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NWA’s Current Research Priorities

1. Health Outcomes Associated with WIC Participation
2. Impact of Potential Changes to WIC Food Packages
3. Aligning Policies and Procedures for Systems-Level Innovations
4. Understanding Changes in WIC Caseload to Target WIC Services to the Most At-Risk Families
5. Understanding How WIC Participants Use Technology and Considering Barriers to Technology Access
6. Economic Value of WIC Participation

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Are our priorities reflected in recent research efforts?

YES!!

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Stay in the know though WIC Research to Practice

Researcher Spotlight: Angela Odems-Young, PhD

Dr. Angela Odems-Young is an Associate Professor in the Department of Kinesiology and Nutrition at the University of Illinois (UIUC) in Chicago. Dr. Odems-Young studied research at UIUC, and has since built a strong relationship with the Illinois State Agency and through a data sharing agreement has been able to use WIC administrative records to conduct a research that has largely focused on interventions to recruit and retain WIC eligible children until age five. In addition, Dr. Odems-Young has served as a Committee Member on the past two National Academy of Sciences, Engineering and Medicine review of the WIC food package.

What drew you to study WIC?

My research interests focus strongly on examining intervention strategies/approaches that support and improve the health and well being of low-income mothers and families. In 2009, I was invited to serve on a National Academies of Sciences, Health and Medicine (formerly the Institute of Medicine) committee to review the inaugural WIC food packages. This experience gave me a more in-depth understanding of the benefits of WIC.

What are the goals of your most recent research on WIC?

We recently completed a study in collaboration with Illinois WIC called WIC to 5. Informed by the Theory of Planned Behavior, that project focused on identifying and addressing barriers to WIC participation and retention among eligible children in Illinois. The goals of WIC to 5 were to: (1) Raise Client Awareness of WIC Eligibility and (2) Increase the number of children enrolled in WIC.

• Short pregnancy intervals and adverse pregnancy outcomes by maternal age in the United States.
• Maternal adolescent pregnancy and child health.
• Adverse childhood trajectories as a consequence of exposure to poverty on childhood trajectories and beyond.
• Racial and ethnic disparities in maternal and infant health outcomes.
• Health care access and utilization among pregnant women and newborns.
Who Does WIC Research?

USDA – Economic Research Service

USDA – Food and Nutrition Service

Non-Profit Organizations

University Researchers

WIC State Agencies

WIC Local Agencies

WIC Clinic staff

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True Collaborations

NWA’s Guidance on Planning, Conducting and Communicating a WIC Research Project

https://www.nwica.org/research-activities

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Coming soon…WIC Research, Policy & Practice Hub
Mobile Apps for WIC Participants

Summer J Weber PhD, RD
Postdoctoral Research Fellow
Vanderbilt University Medical Center
summer.weber@vumc.org
Outline

1. Background
2. WIC App Review
3. CHEW 2.0 Usability Testing
Background: What WIC participants want

**Choice**
Participants are satisfied with WIC foods when they feel they have unrestricted choice

**Efficiency**
Participants desire efficiency in WIC at the clinic, vendor, and administrative levels

**Support**
It's easier to use WIC when participants have both institutional (workplace, clinic) and interpersonal (family, friends, peers) support
Background: The need for apps in WIC

NWA 2018 Research Needs Assessment:
Understanding how WIC Participants use technology and considering barriers to technology access

WIC works but enrollment is declining
Barriers to using WIC exist at the clinic and store

WIC needs updated tools to help future generations
Technology could ease the use of WIC, increase redemption of WIC foods, and improve diet quality of WIC participants
A Review of Smartphone Apps and Features for WIC Participants

### Apps requiring user verification to access features

- Bnft (North Carolina)
- ExWIC (Arizona and tribal territories)
- Indiana WIC
- Maryland WIC
- My Minnesota WIC App
- My OK WIC (Oklahoma)
- My WIC (Chickasaw Nation)
- WIC Connect (Michigan)
- WIC Shopper (Available in many states)
- WICSmart (Available in many states)
- WIC2Go (New York)
- Wisconsin MyWIC

### Apps NOT requiring user verification to access features

- Alabama WIC
- Arizona WIC Clinic Search (no longer available)
- Sacramento County WIC (no longer available)
- WIC Food Shopping Guide (Wyoming)
- WIC San Diego
### Classification of Features in Smartphone Applications for WIC Participants

<table>
<thead>
<tr>
<th>App Features</th>
<th>Shopping Management</th>
<th>Clinic Appointment Management</th>
<th>Informational Resources</th>
<th>WIC-Required Education</th>
<th>Other User Input</th>
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A Review of Smartphone Apps and Features for WIC Participants

CONCLUSIONS/ FUTURE DIRECTIONS

Smartphone apps for families in WIC are common, especially in states that have implemented EBT for WIC.

- 17 WIC apps existed in 37 states, territories, and tribal nations.
- Apps that assisted participants with real-time shopping management received the most positive user ratings and reviews.
- The most common app features included benefit balance checking and barcode scanning features.
- As EBT for WIC continues to roll out nationwide, more states are projected to adopt or develop apps.
- Future app versions should consider expanding on clinic management and nutrition information features.
- To evaluate WIC apps, collaboration between WIC agencies, EBT vendors, app developers, and researchers is necessary.

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture under award number 2017-68001-26352
User Testing of the CHildren Eating Well (CHEW) Smartphone App for WIC Families

Qualitative Interviews

Building on the original CHEW prototype app, our team is conducting qualitative interviews with families of WIC children in an iterative process to inform user-centered development of version 2.0 and to maximize usability of the app.

Participant Recruitment

WIC Caregivers of 2-4 year old children who use smartphones are being recruited from WIC clinics, health departments, and throughout the community to participate in in-depth audio-recorded interviews.

Interview Protocol

Participants are asked to speak about their experience using WIC services, shopping for WIC foods, and using smartphone technology. Participants are asked to form mental models about using recipes, shopping lists, and using WIC benefits and checking their WIC balance.

Desirable App features

Possible app features and functions were written on sorting activity cards. Participants are asked to sort features by importance and then to place the cards into natural groupings of similar features.

Qualitative Analysis

Interview transcripts are coded then analyzed using constant comparative analysis to identify emergent themes.
User Testing of the Children Eating Well (CHEW) Smartphone App for WIC Families

PRELIMINARY RESULTS

EMERGING THEMES

Desire for efficiency in WIC: Participants spoke about several barriers both at the clinic (e.g., long wait times) and at the store (e.g., unapproved items at checkout), which they felt should be addressed in the program.

Desire to maximize WIC benefits: Participants dislike leaving benefits behind due to stock issues or issues at checkout. Participants voiced excitement about opportunities for partial redemption of benefits once the transition from vouchers to EBT is complete.

Trying to get it done, trying again, trying to make it efficient, trying to maximize the benefit and do it all quickly in the store. I’ll try to make it as quick as possible. Plus you know you still got to get home and do homework and get ready for school the next day and you know you don’t want to spend a whole lot of time in the store. (WIC Caregiver; parent of 2 children)
User Testing of the CHILDren Eating Well (CHEW) Smartphone App for WIC Families

PRELIMINARY RESULTS

USER PRIORITIES

Resoundingly, participants designated balance checking and barcode scanning the 'most important' features when asked about an app for WIC. Appointment scheduling and recipes appealed to participants, while clinic/store location features were of lower priority.

I think the 'scan items to validate that it is WIC', that's a good [app feature]. I think that's like the biggest one. Just to make sure. I have come across a lot with just making sure that it is a WIC item. That's like the biggest thing. (WIC Caregiver; parent of 1 child)
User Testing of the Children Eating Well (CHEW) Smartphone App for WIC Families

**PRELIMINARY RESULTS**

**CONCLUSIONS**

User testing and input from WIC participants is helping to inform the development and user experience design of the CHEW 2.0 app. Interviews with participants have demonstrated the desire and need for updated tools for WIC.

**IMPLICATIONS**

After completing development and field testing, the CHEW 2.0 app will be implemented in WIC clinics across Tennessee as a supplemental education tool for families, with the potential for future dissemination to other states.
Questions?

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The Economic Impacts of Breastfeeding:  
A Focus on USDA’s WIC Program

Vic Oliveira and Xinzhe Cheng  
USDA, Economic Research Service

NWA 2019 Washington Leadership Conference  
March 3, 2019
The American Academy of Pediatrics recommends:

“Exclusive breastfeeding for about 6 months followed by continued breastfeeding for 1 year (or longer) as complementary foods are introduced.”
Breastfeeding rates among children born in 2015

Source: Centers for Disease Control and Prevention.
Senate Committee on Appropriations 
(March 2018)

“The Committee requests within 12 months an 
updated study from the ERS on the economic benefits 
of breastfeeding, including its potential cost-savings 
for Medicaid and the WIC Program.”
Objectives

To estimate the effects of increased breastfeeding rates in WIC on:

• WIC program costs
• Medicaid costs
• Health-related costs to WIC households
Objectives

To estimate the effects of increased breastfeeding rates in WIC on:

• WIC program costs
• Medicaid costs
• Health-related costs to WIC households
To quantify the economic impacts of breastfeeding in WIC, we compared:

- Actual costs based on 2016 breastfeeding rates
- Estimated costs if breastfeeding rates hypothetically reached “medically recommended” levels
“Medically recommended” breastfeeding rates

Operationalized as 90 percent of infants are fully breastfed (i.e., no infant formula) for 12 months
Effects of increased breastfeeding rates on WIC

• Number of participants

• Food package costs

• Nutrition Services and Administration (NSA) costs
Estimated effects of increased breastfeeding rates in WIC

Note: Medically recommended breastfeeding rates assumes 90 percent of infants are exclusively breastfed for their first 6 months, followed by continued breastfeeding with the addition of complementary foods—but no infant formula—for the next 6 months. Source: USDA, Economic Research Service.
Estimated effects of increased breastfeeding rates in WIC

Note: Medically recommended breastfeeding rates assumes 90 percent of infants are exclusively breastfed for their first 6 months, followed by continued breastfeeding with the addition of complementary foods—but no infant formula—for the next 6 months. Source: USDA, Economic Research Service.
## Estimated effects of increased breastfeeding rates in WIC

<table>
<thead>
<tr>
<th>Number of participants</th>
<th>Food package costs for infants (645,811)</th>
<th>Food package costs for mothers ($512.9)</th>
<th>NSA costs ($286.2)</th>
<th>Net effect on program costs ($252.4)</th>
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<tr>
<td>Number of participants</td>
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Note: Medically recommended breastfeeding rates assumes 90 percent of infants are exclusively breastfed for their first 6 months, followed by continued breastfeeding with the addition of complementary foods—but no infant formula—for the next 6 months.

Estimated effects of increased breastfeeding rates in WIC

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<th>Number of participants</th>
<th>Food package costs for infants (8.4% increase)</th>
<th>Food package costs for mothers</th>
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Note: Medically recommended breastfeeding rates assumes 90 percent of infants are exclusively breastfed for their first 6 months, followed by continued breastfeeding with the addition of complementary foods—but no infant formula—for the next 6 months.

Breastfeeding Savings Calculator

How the Calculator Works
Different durations of breastfeeding are associated with differences in health outcomes for mothers and for children. To create this cost calculator, we estimated the difference in disease burden associated with a unit-change in rates of any breastfeeding at 0 to 12 months and in exclusive breastfeeding from 0 to 6 months. Users can select the entire US, or a specific state, to see breastfeeding rates at baseline (either US rate in 2012 or 2014), and then specify "future" any breastfeeding rates of their choice at 0, 6, and 12 months, as well as exclusive breastfeeding rates at 0, 3 and 6 months. Users can hand enter the future rate, or select Healthy People 2020 goals, 60% rates at all time points, or 80% at all time points. The calculator then estimates the expected difference in disease burden.

Start Calculator
14 Diseases Under Study

**Pediatric**

- Acute Lymphoblastic Leukemia (ALL)
- Crohn’s disease
- Ulcerative colitis
- Ear Infections (Acute Otitis Media)
- Gastrointestinal Illness (GI)
- Lower Respiratory Tract Infection (LRTI)
- Obesity
- Necrotizing Entercolitis (NEC)
- Sudden Infant Death Syndrome (SIDS)

**Maternal**

- Breast Cancer
- Diabetes (Type 2)
- Hypertension
- Myocardial Infarction
- Premenopausal ovarian cancer
Cost savings categories

• Medical costs—physician fees, hospital costs, prescription drugs, medical supplies, etc.

• Nonmedical costs—lost wages from missed work

• Costs of early death—based on the value of a statistical life
$0.635 billion in nonmedical costs saved

$1.5 billion in medical costs saved

$6.9 billion from reductions in early death
• $0.635 billion in nonmedical costs saved
• $1.5 billion in medical costs saved
• $6.9 billion from reductions in early death
Estimating effects of increased breastfeeding on Medicaid costs

• $1.5 billion savings in medical costs

• 71% of WIC participants also participate in Medicaid
  (71 percent of $1.5 billion = $1.1 billion)
Estimating effects of increased breastfeeding on Medicaid costs

- $1.5 billion savings in medical costs
- 71% of WIC participants also participate in Medicaid (71 percent of $1.5 billion = $1.1 billion)
- But some diseases may not occur until many years have passed (e.g., breast cancer)
- Savings that accrue while participant is still likely to be enrolled in Medicaid
- Restricted analysis to diseases with a short time horizon (e.g., ear infections, LRTI)
Estimated effects of increased breastfeeding in WIC on Medicaid costs

- Total savings of $176.2 million, including:
  - $111.6 million in savings to Federal portion of Medicaid
  - $64.7 million in Medicaid savings to States
Estimated effects on Federal costs if breastfeeding rates in WIC increased

Source: Economic Research Service.
We also conducted a sensitivity analysis
Breastfeeding rates of infants participating in WIC, 2015

- **Initiation**: 76.7%
- **At 6 months**: 44.5%
- **At 12 months**: 25.4%

Source: Centers for Disease Control and Prevention.
Estimated effect on WIC costs under different hypothesized scenarios

Notes: The medically recommended scenario assumes 90 percent of infants are fully breastfed (i.e., no infant formula) for 12 months. The alternative with partial breastfeeding scenario assumes that 90 percent of infants are fully breastfed for their first 6 months, followed by partial breastfeeding (i.e., both breastfeeding and formula feeding) for months 7 through 12.

Conclusions

Increased breastfeeding rates in WIC would:

• WIC program costs
• Federal Medicaid costs
• Total Federal costs
• Length of time mothers participate in WIC
• Health-related costs to WIC households

The magnitude of these effects depends on the degree to which breastfeeding rates increase and partial breastfeeding occurs
The Economic Impacts of Breastfeeding: A Focus on USDA’s Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

Victor Oliveira, Mark Prell, and Xinzhe Cheng