Evaluating the Effectiveness of Nutrition Education Methods for WIC Service Clients in Manhattan – Kansas

Zaher AL bashabsheh
Master of Public Health Report Defense
November 20, 2014
Outline of Presentation

- WIC Program Background
- Nutrition Education
- Goals of Nutrition Education
- Certification Process
- Nutrition Education Methods
- Role of Behavior Change Theories
- Methodology
- Conclusion
- Academic Experience Applied
WIC Program Background

- WIC program was established in 1974
- WIC is a supplemental nutrition program designed to improve pregnancy outcome, promote health of pregnant, delivered women, infants and children under the age of five

www.nwica.org
The number of participants in the WIC program and the funding level

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Participants</th>
<th>Funding Level in Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>8.6 million</td>
<td>$ 6.522 billion</td>
</tr>
<tr>
<td>2010</td>
<td>9.2 million</td>
<td>$ 7.3 billion</td>
</tr>
<tr>
<td>2000</td>
<td>7.2 million</td>
<td>$ 4 million</td>
</tr>
<tr>
<td>1990</td>
<td>4.5 million</td>
<td>$ 2.1 million</td>
</tr>
<tr>
<td>1980</td>
<td>1.9 million</td>
<td>$ 750 million</td>
</tr>
</tbody>
</table>
Foods Provided by the WIC Program

- Infant cereal
- Iron–fortified adult cereal
- Iron–fortified infant formula
- Vitamin C–rich fruit or vegetable juice
- Eggs
- Milk
- Cheese
- Peanut butter
- Dried and canned beans/peas
- Canned fish

www.wic.org
Who is Eligible for the WIC Program

- Pregnant women
- Breastfeeding, Non-breastfeeding mothers
- Have a child under the age of five
- Are determined by WIC dietitian to have medical or nutritional need
- Meet income guidelines

www.kansaswic.org
Nutrition Education is any combination of educational strategies accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food – and nutrition related behaviors conducive to health and well being.

Jones & Bartlett, 2007
Nutrition education is effective when:
– It results in a positive nutrition-related behavior change
Process of Delivering Effective Nutrition Education in WIC

- Select Counseling Methods/Teaching Strategies
- Select Messages
- Select Delivery Medium
- Select Informational Environmental Reinforcements
- Select Follow-up

Review WIC Nutrition Assessment

Achterberg C & Miller C 2004
The Goals of Nutrition Education

- Emphasize the relationship between good nutrition, physical activity and health
- Assist the WIC client achieve a positive change in their nutrition and physical activity habits
- Prevent nutrition related problems

www.kansaswic.org
Nutrition Education Methods

- Online Education
- Interactive Notebooks
- Individual Counseling
Online Method

- wichealth.org is an interactive nutrition education website.
- Clients who complete a learning model on the website can get a certificate that is used to help the dietician staff to follow up with them.
Nutrition Education Methods

- Interactive Notebooks: such as (pamphlets, newsletters, and posters) to reinforce clients understanding.

- Individual Counseling: providing nutrition education through one-on-one counseling integrates behavior change that affect WIC clients to improve their nutritional behavior.
Certification Process

- New applicants and existing clients must go through a certification process
- Time period is six months
- During the certification appointment, the WIC staff performs a health and nutrition screening
- Clients receiving two nutrition education sessions
We used the Transtheoretical Model (TTM)

Stages classified as:

- Pre-contemplation
- Contemplation
- Preparation
- Action
- Maintenance

Prochaska JO & DiClemente 1983
Objective and hypothesis

- **Purpose:** Evaluate the nutrition education methods used by WIC office and to determine which one has a highest clients satisfaction

- **Research Question:** Is there nutrition education method with higher clients satisfaction than others?
Study Design

- Cross-sectional study

- Participants
  - Female = 95
  - Male = 5

- High risk
- Individual counseling

- Low risk
  - Individual counseling
  - Notebook
  - Online education

- 2 sessions of nutrition education
- Stages of change
- Questionnaire
Study Design

- Nutrition education topics used for this study were:
  - Whole Grains
  - Fruits and Vegetables
  - Breastfeeding
  - MyPlate
  - Infant Feeding: Start Solids

- The survey was distributed by the WIC staff and given to the clients after the second nutrition education session
Questionnaire for online method

- Wichealth.org website is easy to use.
- The information on this website is easy to understand.
- The information on the website is helpful.
- I believe I can make changes using what I learned.
- I want to use web pages to learn about other WIC topics.
The nutrition education I get through individual counseling is easy to use.

The information offered by the dietitian is easy to understand.

The information offered by the dietitian was helpful.

I believe I can make changes using what I learned.

I want to use individual counseling to learn more about other WIC topics.
• The nutrition notebooks was easy to use.
• The information in the nutrition notebooks is easy to understand.
• The information in the nutrition notebooks is helpful.
• I believe I can make changes using what I learned.
• I want to use nutrition notebooks to learn more about other WIC topics.
Response Categories

Strongly disagree → 1
Disagree → 2
Agree → 3
Strongly agree → 4
Number of Clients

![Bar chart showing the number of clients using different nutrition education methods: Individual Counseling, Notebooks, and Online. The chart indicates higher numbers for Notebooks and Online, with Individual Counseling having fewer clients.]
Clients age

- 14-17: 19%
- 18-24: 19%
- 25-34: 45% (largest segment)
- 35-44: 12%
- 45 and over: 14%

Note: The percentages add up to 100%.
Racial categorical

- American indian or alaska native: 1%
- Black or african american: 2%
- Native hawaiian or other pacific islander: 4%
- White: 78%
- Asian: 3%
- Multiracial: 4%
- Other: 8%
# ONE-WAY ANOVA

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>2</td>
<td>49.89000000</td>
<td>24.94500000</td>
<td>3.10</td>
<td>0.0494</td>
</tr>
<tr>
<td>Error</td>
<td>97</td>
<td>779.55000000</td>
<td>8.0365979</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>99</td>
<td>829.44000000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Statistically significant at $\alpha = 5\%$
## Differences of Method Least Squares Means
Adjustment for Multiple Comparisons: Tukey-Kramer

| Method              | Method    | Estimate | Standard Error | DF  | t Value | Pr > |t| | Alpha | Lower  | Upper  |
|---------------------|-----------|----------|----------------|-----|---------|------|---||       |        |        |
| Individual counseling | Notebooks | 1.4250   | 0.7764         | 97  | 1.84    | 0.0695 | 0.05 | -0.1159 | 2.9659 |
| Individual counseling | Online    | 1.9250   | 0.7764         | 97  | 2.48    | 0.0149 | 0.05 | 0.3841 | 3.4659 |
| Notebooks           | Online    | 0.5000   | 0.6339         | 97  | 0.79    | 0.4322 | 0.05 | -0.7581 | 1.7581 |
Conclusion

- Individual counseling had significantly higher satisfaction scores than online nutrition education method.

- These findings indicate that clients who were assigned to use individual counseling method were more likely to be satisfied than clients who used notebooks and online nutrition education methods.
Field Experience Preceptors

- Lisa Ross, RD, LD, CBC, WIC Program Coordinator
- Katherine Oestman, MPH. Health educator at RCHD
Activities Performed

- Writing an IRB application
- Observed the WIC dietitians
- Developed a survey
- Delivered a presentation for the Riley County Health Department staff about the findings of this study
- Entering and analyzing the data
Epidemiology

- Was applied when discussing the effects of dietary intake could be modified by another exposure such as physical activity
- Discussing the nutritional risk factors that might affect WIC client
Useful in the collecting, analyzing, interpreting the data from survey in order to determine which nutrition education method has higher satisfaction.
- Important when discussing food safety regarding washing and handling cooked or ready to eat food.
- When encouraging the pregnant women to avoid eating heavy metals.
To understand how the WIC office works with other partner in the health care system to promote disease prevention and healthy life style
Understanding behavior change theories such as (TTM)

This course was utilized to identify the readiness of clients to change their behavior
Conclusion

- How nutrition and food related public policies affect health, especially in vulnerable populations
- Provided me with opportunity to apply knowledge and skills that I learned in the classroom
Future Work

- Evaluating the effectiveness of nutrition education methods on behavior change for WIC clients
- I will continue at Kansas State University for a PhD in public health nutrition
Acknowledgements

- MPH Committee
  - Dr. Tandalayo Kidd, Major Professor
  - Dr. Mark Haub
  - Dr. Weiqun Wang

- MPH Program Staff
  - Dr. Micheal Cates, MPH Director
  - Barta Stevenson, MPH Program Assistant
  - Dr. Kimathi Choma, MPH Field Experience Facilitator

- Field Experience Preceptors
  - Lisa Ross
  - Katherine Oestman

- My Wife (Nibal)
Questions?