



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

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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

Background (Continue)

- The number of participants in the WIC program and the funding level

Year	Number of Participants	Funding Level in Billions
2013	8.6 million	\$ 6.522 billion
2010	9.2 million	\$ 7.3 billion
2000	7.2 million	\$ 4 billion
1990	4.5 million	\$ 2.1 billion
1980	1.9 million	\$ 750 million

www.wic.org

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

- 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

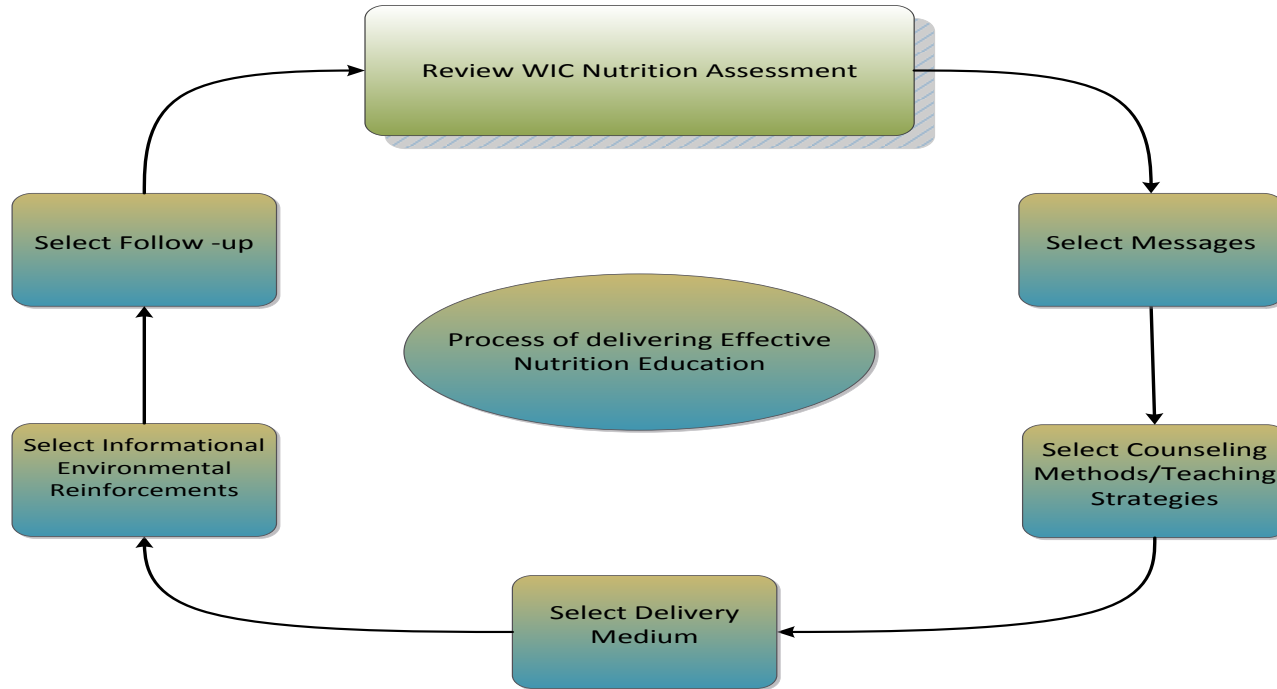


What is Effective Nutrition Education?

- Nutrition education is effective when:
 - It results in a positive nutrition-related behavior change



Process of Delivering Effective Nutrition Education in WIC



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 dietitian 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

Role of Behavior Change Theories

- We used the Transtheoretical Model (TTM)
- Stages classified as:



Prochaska JO & DiClemente 1983

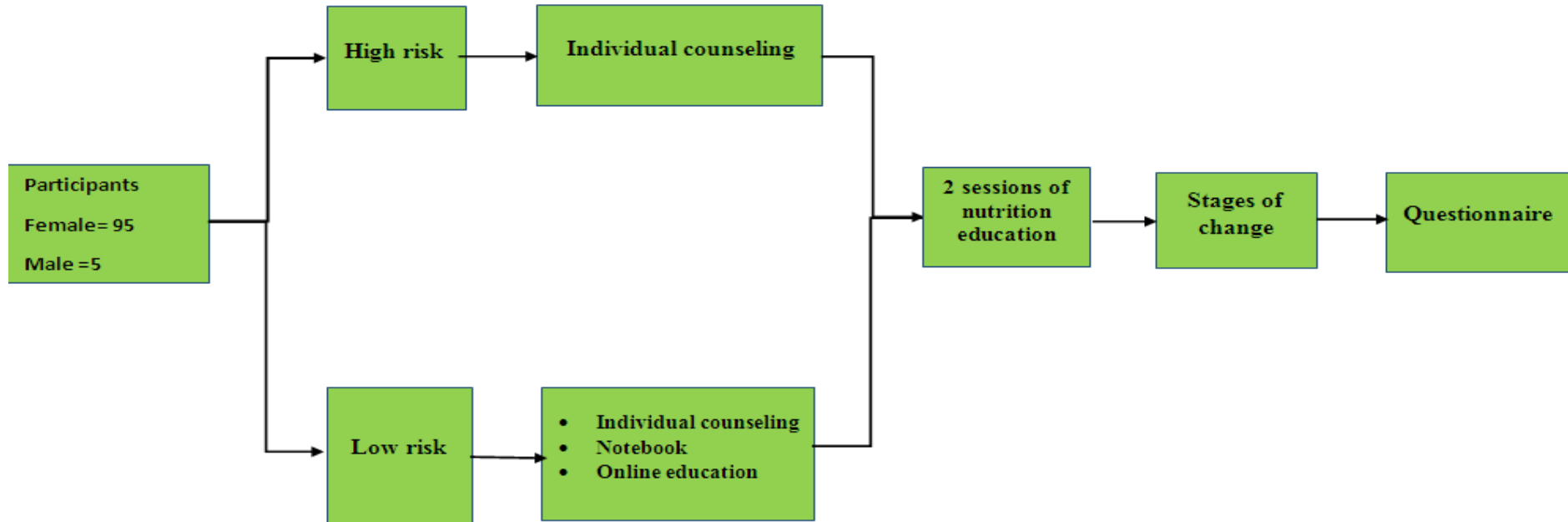
Objective and hypothesis

- 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



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.

Questionnaire for individual counseling

- 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.

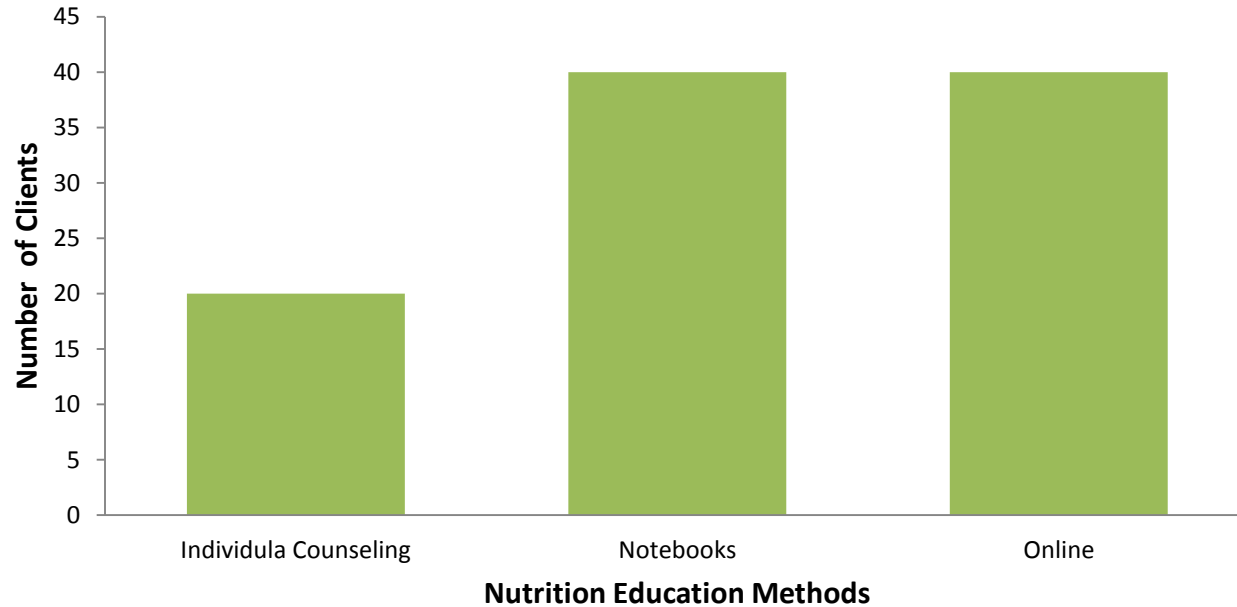
Questionnaire for notebooks

- 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.

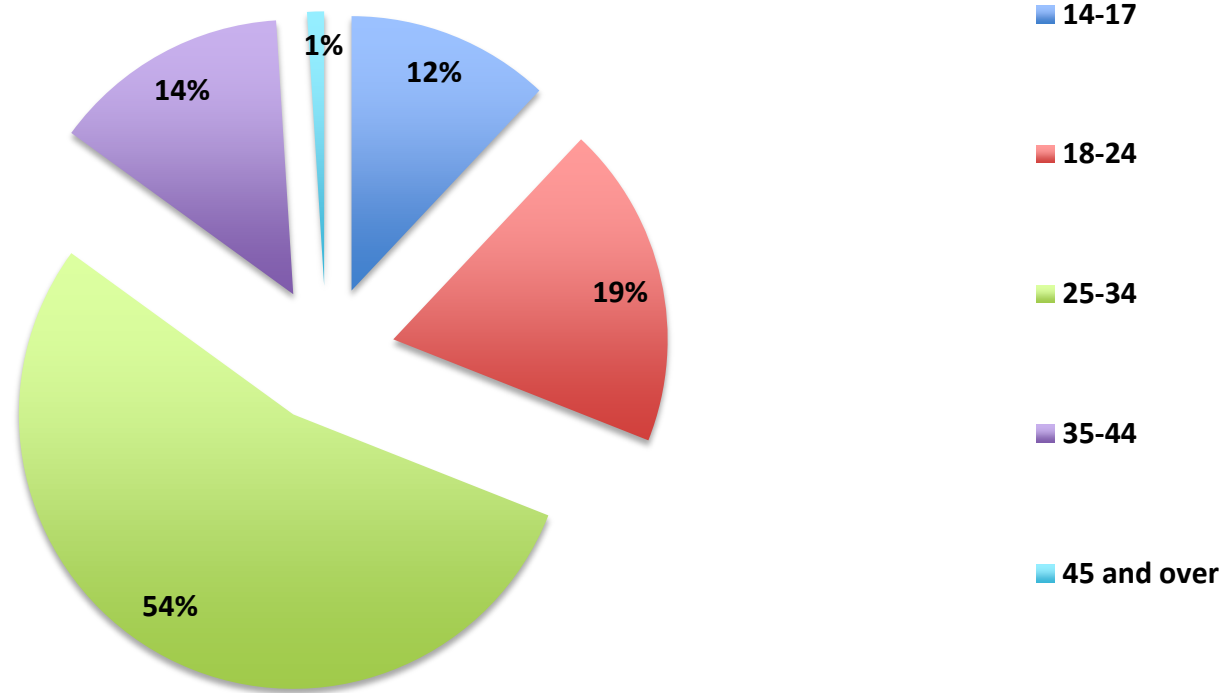
Response Categories

Strongly disagree	→	1
Disagree	→	2
Agree	→	3
Strongly agree	→	4

Number of Clients



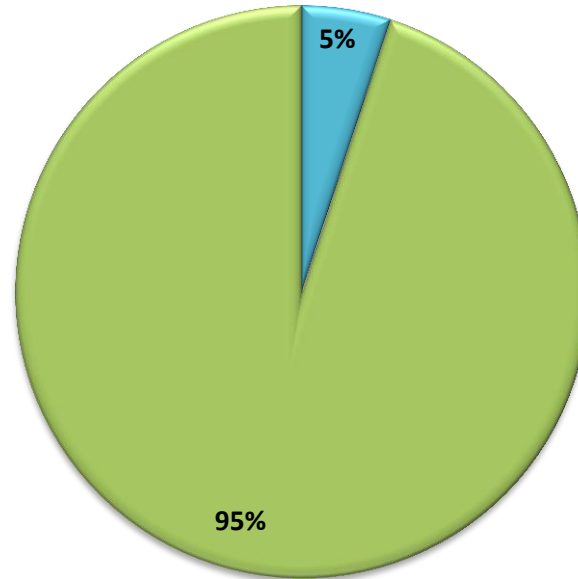
Clients age



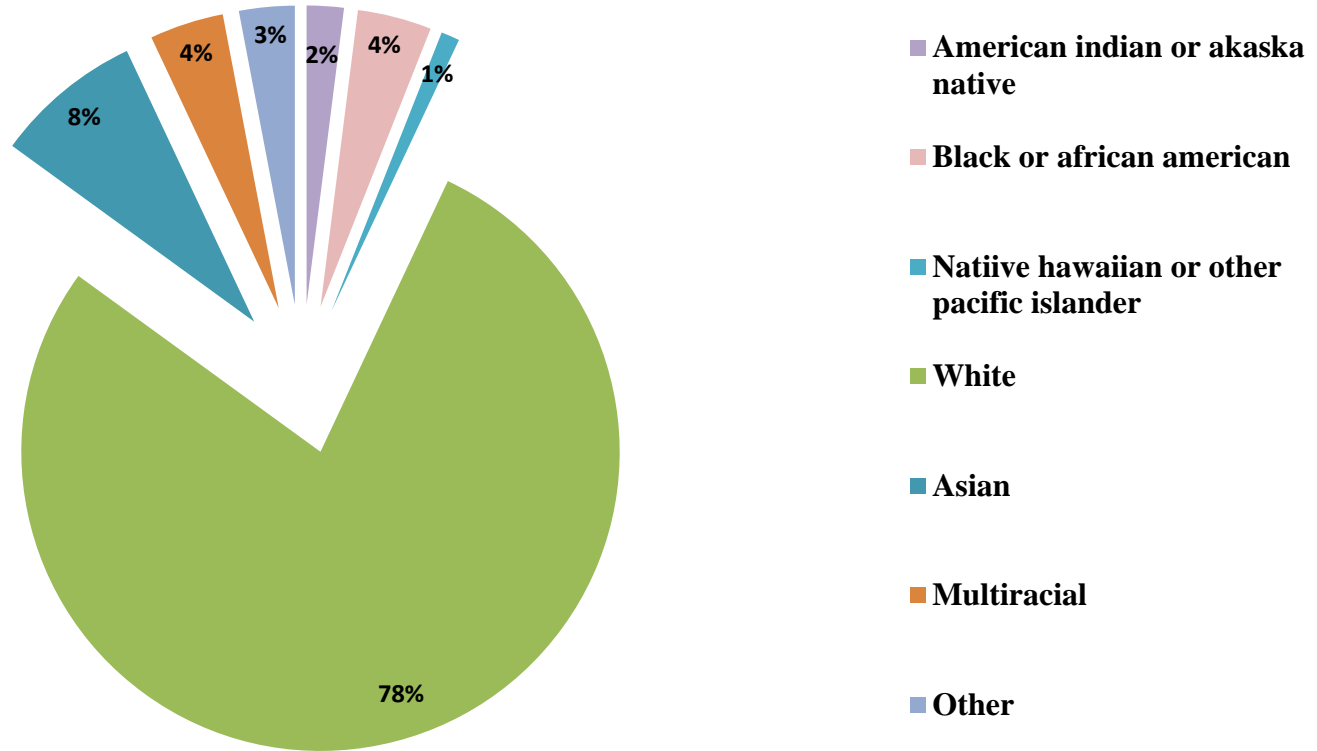
Sex

■ male

■ female



Racial categorical



Statistical Methods

■ ONE-WAY ANOVA

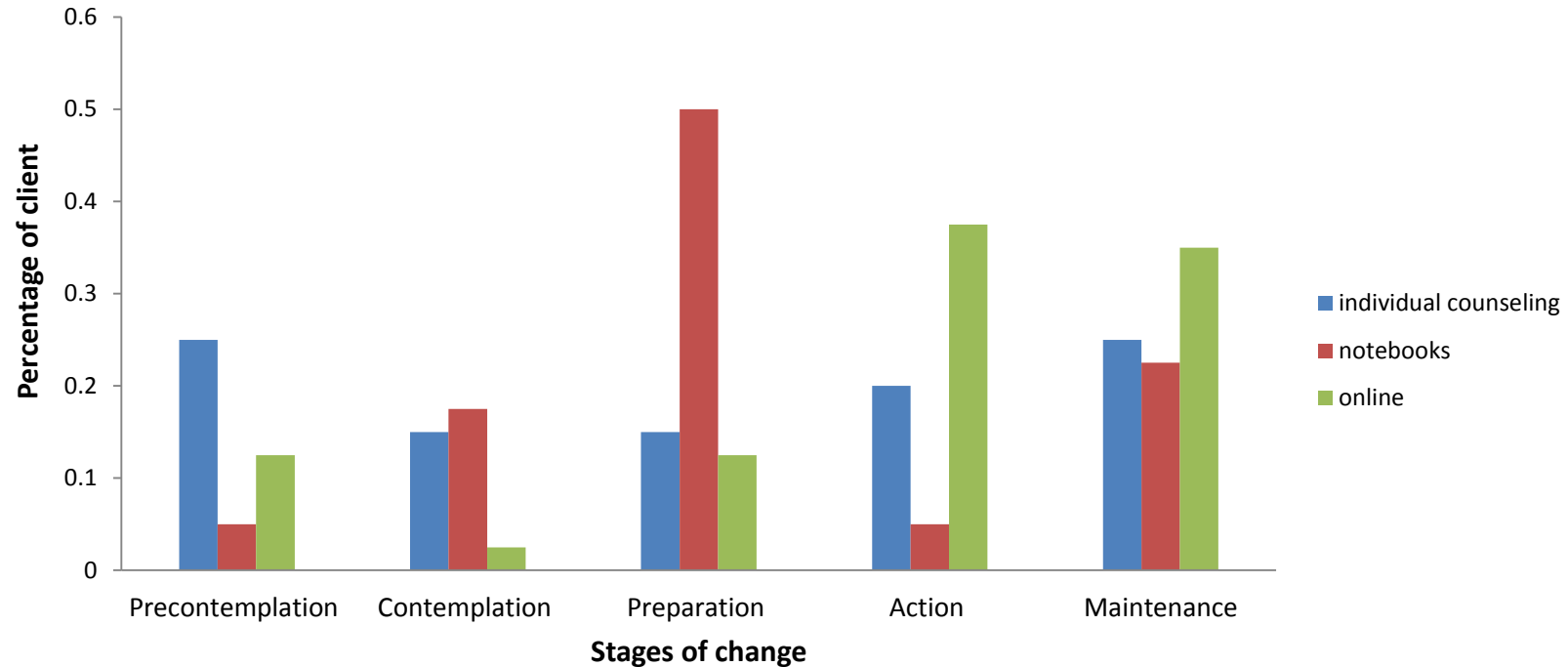
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	49.8900000	24.9450000	3.10	0.0494
Error	97	779.5500000	8.0365979		
Corrected Total	99	829.4400000			

statistically significant at $\alpha = 5\%$

Tukey– Kramer Pairwise Comparisons

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

Percentage of clients in each stage



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

Academic Experiences Applied

❖ 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

Biostatistics



- Useful in the collecting, analyzing, interpreting the data from survey in order to determine which nutrition education method has higher satisfaction.

Environmental Toxicology

- 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.

Administration of Health Care Organizations

- To understand how the WIC office works with other partner in the health care system to promote disease prevention and healthy life style

Social and Behavioral Bases of Public Health

- 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



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- Field Experience Preceptors
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 - Katherine Oestman
- My Wife (Nibal)



Questions?