

# Effectiveness of Nutrition Education Sessions to Increase Non-Nutrition Graduate Students' Level of Nutrition Knowledge and Confidence in Giving Nutrition Advice



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## Introduction

### Obesity & Chronic Disease

- More than one-third of US adults are obese (Ogden, Carrol, Kit, & Flegan, 2014)
- Obesity increases the risk of developing chronic diseases, e.g. diabetes and cardiovascular disease (CDC, 2015)
- Lifestyle factors, e.g. dietary habits, play a key role in the development of chronic disease (DiMaria-Ghalili et al., 2014)

### Need to Educate Non-Nutrition Health Professionals on Nutrition

- Increased demand for healthcare professionals to address the obesity and chronic disease epidemic (Ettienne-Gittens et al., 2012)
- Non-nutrition health professionals are often tasked with delivering nutrition education (AND, 2014; Ettienne-Gittens et al., 2012)
- Few guidelines exist regarding basic qualifications needed by non-nutrition health professionals who give nutrition education (Shirani et al., 2013)

### Efficacy of Nutrition Training Programs

- Providing nutrition education may help non-nutrition health professionals increase their level of nutrition knowledge

## Research Questions

- Can the nutrition knowledge of future healthcare professionals increase with targeted training?
- Will that knowledge/training increase their level of confidence to give nutrition-related advice to the public?

## Hypotheses

**Null Hypothesis 1:** There is no significant difference in non-nutrition graduate students' level of nutrition knowledge before and after participating in seven basic nutrition education sessions.

**Null Hypothesis 2:** There is no significant difference in non-nutrition graduate students' level of confidence to give nutrition advice before and after participating in seven basic nutrition education sessions.

## Methods

### Sample Population (n = 5)

- Non-randomized, convenience sample of Graduate Research Fellows (GRFs), 23-26 years old in Cohort 5, 2015-2016, *Sanos y Fuertes* research project

## Methods

### Procedures

- Permission to use the data was granted by the Co-PI
- Data: pre/post-tests, demographic forms, and focus group recording
- 6 nutritional professionals recruited to evaluate the content validity of pre/post-tests

### Measures

- **Demographics**
  - 7-item paper-and-pencil questionnaire
- **Nutrition Knowledge**
  - 7 identical pre/post-tests containing 5 question on the presented topic
  - Topics: nutrient guidelines overview, digestive system anatomy, digestive disorders, chronic disease, mindful eating, nutrition and pregnancy, and infant/toddler nutrition
- **Confidence to Give Nutrition Advice**
  - 4 questions printed on paper and given during the focus group
  - Confidence level rated on a scale of 0 to 10 (0 = not at all confident, 5 = somewhat confident, 10 = extremely confident)
- **Content Validity**
  - 42-item Content Validity Questionnaire
  - 4-point Likert scale (1 = not relevant, 2 = somewhat relevant, 3 = relevant, 4 = very relevant)

### Data Analysis

- Hypotheses: paired sample t-test
- Focus group data: transcribed and coded for themes
- Content validity: content validity index (CVI)

## Results

Sample Demographics		
Variable	n	%
Gender		
Female	5	100
Major		
Masters of Public Health	5	100
Intro to Nutrition Course		
Yes	3	60
No	2	40
Extent of Nutrition in Program		
Nonexistent	0	0
Mild	5	100
Moderate	0	0
Good	0	0
Extensive	0	0

## Results

**Table 1.** Paired sample t-tests difference in level of nutrition knowledge

		n	Mean	Std. Error	t	df	p-value
Pair 1	Pre-Test 1	5	2.40	1.14	-6.000*	4	<b>.004</b>
	Post-Test 1		4.80	.447			
Pair 2	Pre-Test 2	5	2.00	1.58	-4.221*	4	<b>.013</b>
	Post-Test 2		4.80	.447			
Pair 3	Pre-Test 3	5	1.80	1.09	-6.532*	4	<b>.003</b>
	Post-Test 3		5.00	.000			
Pair 4	Pre-Test 4	5	1.80	1.48	-4.824*	4	<b>.008</b>
	Post-Test 4		5.00	.000			
Pair 5	Pre-Test 5	5	2.00	.707	-7.483*	4	<b>.002</b>
	Post-Test 5		4.80	.447			
Pair 6	Pre-Test 6	5	3.00	.707	-4.811*	4	<b>.009</b>
	Post-Test 6		4.80	.447			
Pair 7	Pre-Test 7	5	2.60	.894	-5.880*	4	<b>.004</b>
	Post-Test 7		4.80	.447			

\*Significant at the 0.05 level

**Table 2.** Paired sample t-tests difference in level of confidence to give nutrition advice

		n	Mean	Std. Error	t	df	p-value
Pair 1	Confidence Before	5	3.80	1.30	-4.824*	4	<b>.008</b>
	Confidence After		7.00	1.22			
Pair 2	Confidence Before	5	4.60	.894	-3.833*	4	<b>.019</b>
	Confidence After		7.20	1.48			

Note: Pair 1: perceived confidence level in nutrition knowledge. Pair 2: perceived confidence level to give nutrition advice

\*Significant at the 0.05 level

### Content Validity of Pre/Post-Tests

- Majority of pre/post-test items were relevant and valid (I-CVI greater than 0.79)
- 2 items were not relevant (I-CVI less than 0.79)

### Emergent Themes from Focus Group

- Insufficient Nutrition Knowledge
- Change in Level of Nutrition Knowledge
- Credibility
- Increase in Confidence to Give Nutrition Advice

## Discussion

### Null Hypothesis 1

- Statistically significant difference between pre/post-test scores from all 7 sessions

### Null Hypothesis 2

- Statistically significant difference between perceived level of confidence in their ability to give nutrition advice before and after the nutrition education sessions

## Conclusion & Limitations

### Summary

- There was a significant difference in GRFs level of nutrition knowledge and confidence to give nutrition advice before and after the nutrition education sessions
- As GRFs' level of nutrition knowledge increased, so did their level of confidence

### Future Research

- Future studies should investigate the impact of trainings over a longer period of time

### Limitations

- Small sample population limited to 5 GRFs
- Basic nutrition knowledge is difficult to measure accurately
- 1-hour focus group time frame may not have been sufficient
- A total of 2 pre/post-test items were found to be invalid

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## For more information

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