

16:709:503 Introduction to Applied Nutrition Research (Quantitative Research Approaches and Applications in Community Nutrition) (3 credits)
Spring, 2014 Dr. Debra Palmer Keenan dpalmer@njaes.rutgers.edu;
Work: XXXX; Cell: XXXX

Critical examination, comparison and evaluation of quantitative research paradigms, including issues of methodology, statistical analysis, and ethics, used in Community Nutrition. Emphasis is placed on recognition of pertinent surveys and the development of surveys; research constructs; advanced approaches to synthesis of applied nutrition research literature; evaluation of quantitative research designs and statistical analyses used; and computerized statistical analysis of research data, specifically with regards to nutrition. Application is made to the critical interpretation of quantitative research in health and wellness promotion.

PREREQUISITES

- Human Subjects Certification

GENERAL AIM OF THE COURSE

To increase the breadth and depth of student knowledge regarding the approaches, techniques, terminology, and methodology of quantitative research such that students are enabled to plan quantitative inquiry, analyze data using computerized statistical packages, and practice and critically evaluate research.

SPECIFIC OBJECTIVES OF THE COURSE

Upon completion of the course, the student will be able to:

- Describe the functions of theories and philosophical assumptions in applied nutrition research.
- Describe the theoretical foundations underlying quantitative research.
- Identify the defining characteristics of quantitative applied nutrition research.
- Identify, develop and administer quantitative surveys.
- Justify the selection of specific quantitative strategies for particular types of inquiry.
- Critically evaluate the efficacy of specific research designs for the investigation of specific research problems.
- Analyze and interpret data generated through research & research simulation.
- Review methods currently being employed to evaluate pertinent concepts and constructs in Community Nutrition
- Exhibit an understanding of how research and nutrition policy interact.

CONTENTS AND SCOPE OF THE COURSE

Week 1

Course Introduction

Review of Community Nutrition Programs and Policies

Research Basics – Beginning with the End in Mind

Logic models

Assignment #1: Development/Revision of a Logic Model

Week 2

The Logic Model, Theory, and Evaluation Presentations

Week 3

In-depth Review of the Dietary Guidelines for Americans
Community Nutrition Quantitative Research Types and Designs
Common Study Limitations
Surveys and Scales
What Variables to Use and Asking Good Questions
Assignment #3: A Look at Existing Surveys

Week 4

Descriptive Statistics and the Nature of Quantitative Inquiry

1. Descriptive Statistics
 - a. Who, what, where, when and how
 - b. Frequencies
 - c. Means
 - d. Standard Deviations
 - e. Modes
 - f. Outliers
2. Levels of knowledge
3. Function of variables/proxy variables

Week 5

Guest Lecture on Quantitative Research Processes in Interventions

- Karen T D'Alonzo PhD RN APNC

Guest Lecture on Telephone Surveys & Preparation for Research Activity #2

- Audrey Adler, MS, RD

Assignment #4: A Look at Existing Surveys

Week 6

Developing Surveys, Scales and Measures
Assignment #5: Scale Development Papers

Week 7

Developing Surveys, Scales and Measures – Class Work Groups and Critiques
Assignment #6: IRBs & Methods Write-up

Week 8

IRBs (Why Exempt, Expedited, Full)
The Statistical Family of Means (t-tests, ANOVAs, ANCOVAs, MANOVAs)
Discuss plans to develop survey
Assignment #7: Papers RE: Stats Based on Means

Week 9

Review of Papers that Focused on the Family of Means
Assignment #7: Paper Presentation Preparation/Read Assigned Papers

Week 10

Quiz

Finish review of Papers that Focused on the Family of Means
Overview of Factor Analysis, Discriminant Analysis, Principal Components Analysis, and Regressions Relative to How They Are Often Used in Community Nutrition Research
Review of how to use a survey to answer the research questions you have
Homework preparation

Homework: Creating Survey Questions; Assignment #8: Create hypotheses using the Food Security Module and your questions, and determine what statistics you will use to answer them

Week 11

Developing and Performing Telephone Surveys for Community Nutrition Research
In Groups of 2: 1) Develop a research question you would like to answer using the survey; 2) Determine what questions to use and what sort of data analysis you need to do; 3) Find questions you can use to answer the research questions using analyses you will be able to perform using the data available via the survey questions as asked
Assignment #6

Begin Research Experiences 2 & 3: N-3 Surveys and Exercise Barriers Survey Implementation

Week 12

Presentation of new findings regarding the Impact of Food Package Changes on Access to Healthful Food
Develop questions for a new survey accounting for the research questions you want to ask (and analyses you want to do)

Week 13

Writing Methods, Results, and Discussions/Conclusions
Writing Abstracts
Assignment #9: Write abstract for something from one of your research experiences

Week 14

Wrap up

GRADING

Attendance: 10%
Quizzes: 30%
Assignments: 35%
Research Ride Along: 5%
Final: 20%