

Wake Forest University
Department of Counseling
CNS 721: Research and Statistical Analysis in Counseling
Fall 2011
8:30 – 11:00am Mondays
Location: DeTamble

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Course Overview and Methods of Instruction:

This course will provide you with an overview of statistics and research in counseling. It will combine reading of the required text, journal articles and other selected publications, lectures, discussion, small group activities, and student presentations to help students learn and assimilate the key statistics and research principles necessary to successfully complete the Masters in Counseling program and practice as professional mental health or school counselor.

Course Content and CACREP Standards:

This content of the course is designed to meet the Council for Accreditation of Counseling and Related Educational Programs (CACREP) standards from Section II, Professional Identity (<http://www.cacrep.org/doc/2009%20Standards%20with%20cover.pdf>), under the subheading entitled Research and Program Evaluation: studies that provide an understanding of research methods, statistical analysis, needs assessment, and program evaluation, including all of the following:

- The importance of research in advancing the counseling profession;
- Research methods such as qualitative, quantitative, single-case designs, action research, and outcome-based research;
- Statistical methods used in conducting research and program evaluation;
- Principles, models, and applications of needs assessment, program evaluation, and the use of findings to effect program modifications;
- The use of research to inform evidence-based practice; and
- Ethical and culturally relevant strategies for interpreting and reporting the results of research and/or program evaluation studies.

Required Text:

LaFountain, R.M. & Bartos, R.B. (2002). *Research and Statistics Made Meaningful in Counseling and Student Affairs* (1st ed.). Belmont, CA: Brooks/Cole.

Supplemental (Optional) Texts:

Pyrczak, F. (2004). *Success at Statistics* (3rd ed.). Glendale, CA: Pyrczak Publishing.

Fraenkel, J. & Wallen, N. (2009). *How to design and evaluate research in education* (7th ed.). New York: McGraw-Hill.

Student performance evaluation criteria:

- **Class Participation and Attendance (10% of grade):** Class participation is required. One absence will be excused without penalty, two absences will result in a 2 point deduction in the class participation/attendance component of your final grade, three absences will result in a 3 point deduction, and four or more absences will result in a 4+ point deduction and may result in failure to receive credit for the course. Excessive tardiness and/or unprofessional behavior (e.g., use of unrelated technology such as cell phones and other handheld devices, your laptop computer for internet access, etc. during class) also will negatively impact your grade. In order to participate effectively, you should complete the assigned readings (and problems, if applicable) prior to class. Written assignments due on a given day should be turned in as paper copies (i.e., not electronic copies) on the day they are due, preferably prior to the beginning of class. Papers submitted electronically will result in a half grade deduction (i.e., A to A-) and those submitted late will result in a half grade deduction for each tardy day. Please bring the required textbook and a basic calculator to class. Unless instructed otherwise, you will not need your computer for class (note: you will need your computers for sure on Week 2, 9/12/2011).
- **Protection of Human Subjects Certification (5% of grade) – due Sept. 12 (Week 2):**
Core: 1.j; 7.a.g; 8.a.b.f.
 This assignment is designed to inform you about the rights and welfare of human participants in research. Complete the tutorial and online quizzes at citiprogram.org. See Attachment 1 for instructions. Remember, you must turn in the printed certificate of completion as evidence of completing the assignment. This assignment will be explained in class in detail on Sept. 5 (Week 1).
- **Multifaceted Research Project (60% of grade) – see below for due dates:** This multifaceted project is designed to provide you with an in-depth research experience in which you will select a mental health disorder of your choice from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (see Attachment 2), conduct a literature search and develop a reference list on your disorder, write a moderate length literature review, present a synopsis of your review to the class using Powerpoint, write a grant proposal in which you will request funds for further study of clients who have the mental health disorder you've researched, and present a poster on your topic to 2nd year counseling graduate students and faculty.
 - **Research Project Ideas (5%) – due Sept. 12 (Week 2):**
Core: 1.h.i.j; 8.a.b.c.e.f.
 identify three mental health disorders from the DSM-IV-TR (Appendix 2) that interest you. You have likely come into the program having been exposed to various mental health disorders ... disorders that you may have experienced personally, or perhaps experienced by family members, friends, or coworkers. You will be spending a lot of time researching the disorder you choose, so choose something that is of personal and professional interest to you. Summarize the disorders you've chosen in a paper of 500 words or less. Briefly answer the following questions *for each*: 1) What is the disorder that interests you; 2) Why is it interesting to you; 3) What are some subtopics within this area that you would like to explore (e.g., a certain counseling approach, individual counseling, group counseling, medications ... you don't have to be super specific, rather, I want you to start thinking about the disorder more narrowly ... we'll discuss this more in class). This assignment will be discussed in detail on Sept. 5 (Week 1). Once you've turned this assignment in, I'll

let you know ASAP which of the three disorders you'll be researching (note: I want each student to research a unique disorder).

○ **Reference List (5%)** – due Sept. 26 (Week 4):

Core: 1.j; 7.b; 8.a.b.c.e.f

conduct a literature search using PsycINFO and PubMed (both are required databases for your lit. review) (see Attachment 3 for helpful hints). Another database that may be useful is ERIC, especially if the disorder you choose is common to children or adolescents. Other databases discussed in class can also be used. Choose citations published from 2000-present. You will want to review the *abstracts* from at least 25 citations, however you must choose only 10-12 citations for the reference list you turn in. The citations should include book chapters, review articles, and original research articles from peer-reviewed, professional journals from the fields of counseling, psychology, social work, psychiatry, or similar professional disciplines. In addition, you should definitely use the DSM-IV-TR as one of the books you cite (see bottom of Attachment 2 for proper citation of the DSM-IV-TR). We will spend much of week 2 demonstrating how to conduct a literature search. This assignment will be discussed in detail on Sept. 12 (Week 2).

○ **Literature Review (20%)** – due Oct. 17 (Week 7):

Core: 1.h.i.j; 7.b.c.d.e; 8.a.b.c.e.f.

Your literature review should be at least 10 pages and no more than 15 pages in length, with the following guidelines:

- Use APA format, Arial or Times New Roman font, size 11 or 12, double spaced, standard MS Word document margins
- Page 1 should be the title page
- Page 2 should be the abstract page (should not exceed one page). This is a summary of your lit review.
- Pages 3 through 8-13 should contain the body of the paper, including an introduction that provides background information and discusses the significance of the disorder you're writing about (usually 1-2 pages), methods section to include the key words and search strategies you found most useful, databases that provided the most or best citations ... i.e., if someone else was going to do a lit. review on this topic, what advice would you give them to conduct the most thorough search possible in the most efficient way (up to 1 page), results section (5-10 pages, may be divided into subsections ... should include info from the DSM-IV-TR on your disorder as well as other aspects of the disorder that you've summarized from your lit. search), and discussion including recommendations for future research and study (usually 1-2 pages)
- The last two pages should be for references, listed in APA format

I will distribute an example of a lit. review in class to help guide you. This assignment will be discussed in detail on Sept. 26 (Week 4).

○ **Oral Presentation Part I – Powerpoint Presentation (10%)** – due either Oct. 31 (Week 9), Nov. 7 (Week 10), or Nov. 14 (Week 11):

Core: 1.h.i.j; 7.b.c.d.e; 8.a.b.c.e.f.

The Powerpoint presentation must be 15 minutes in length (see guidelines below), *including* 2-3 minutes for questions at the end of the presentation. The content of

your slides (maximum number 12 slides following the “one slide per minute” rule) will come from your literature review as described below:

- Slide 1 should be the title slide
- Slide 2-3 should provide introductory/background information; why is this disorder significant?

- Slide 4 should describe the methods of your literature review (e.g., key words or search terms, most common journal(s) cited, and anything else you think would help someone in the future conduct a literature review on the same topic)
- Slides 5-8 should summarize the results (hint: you don’t need to discuss every aspect of your lit. review’s results section)
- Slides 9-10 should summarize your discussion/conclusions (again, selected aspects are okay)
- Slide 11 should reflect ideas and recommendations for future study and research (hint: spend some time thinking about the content of this slide as one of the ideas/recommendations you present will likely be the basis for your grant proposal assignment)
- Slide 12 should have selected references

In addition, you must provide your classmates and me with a Powerpoint handout of your presentation (6 on 1 format, double sided copy). This assignment will be discussed in detail on Oct. 10 (Week 6).

○ **Grant Proposal (10%)** – due Nov. 21:

Core: 1.h.i.j; 2.e.f; 8.a.b.c.d.e.f.

For this assignment, you will write a grant proposal in which you will request funds to further clinical practice, education, or research for clients who have the mental health disorder you’ve researched. A template for the proposal will be distributed on Nov. 7 at which time the assignment will be discussed in detail. The vast majority of the content for your grant proposal will come from the literature review you wrote, although the information will be “repackaged” into a format typical for a non-profit agency, association, foundation, or society. This assignment will be discussed in detail on Nov. 7 (Week 10).

○ **Oral Presentation Part II – Poster Presentation (10%)** – due Nov. 28:

Core: 1.h.i.j; 7.b.c.d.e; 8.a.b.c.e.f.

using the content of your literature review and Powerpoint presentation, embellished with graphics of your choice, you will make a poster that will then be shared with 2nd year graduate students and the faculty (setup will occur on Nov. 28 in DeTamble between 2:45-3:15pm, with presentations between 3:15-4:15pm). Be prepared to provide a brief informal presentation of your poster (several minutes) and answer questions for students/faculty that view your poster. This assignment will be discussed in detail on Oct. 10 (Week 6).

• **Quiz 1 (Oct. 3 - Week 5) (5% of grade), Quiz 2 (Oct. 24 - Week 8) (5%), Quiz 3 (Nov. 21 - Week 12) (5%), and Final Exam (Dec. 5 - Week 14) (10%):**

Core: 1.h.j; 7.b.c.d.e.f.g; 8.a.b.c.d.e.f.

Quizzes will consist of 10 questions each with a variety of question formats (e.g., fill in the blank, multiple choice, matching, etc.). The final exam will have 50-100 multiple

choice questions in same format as National Counselor Exam (NCE). It will cover key terms and concepts covered during the semester on research and statistics.

Grading Scale:

A	93-100	C+	77-79
A-	90-92	C	73-76
B+	87-89	C-	70-72
B	83-86	D	60-69
B-	80-82	F	<60

Schedule of Classes and Assignments

Date	Topics and Required Readings (from LaFountain and Bartos)	Assignments Due
Sept. 5 Week 1	Welcome y'all! Antwone Fisher (AF) Clip I Review of Syllabus Assignment discussion – Research Certification Assignment discussion – Research Project Idea Lecture – Research Ethics and the Lessons of Tuskegee	
Sept. 12 Week 2	Lecture - The Research Process and Research Approaches/Literature Review (Chapters 1 and 2) Research Speed Dating Activity In-class demonstration of PsycINFO (Bring your computer to class) Assignment Discussion – Reference List	Turn in certificate of completion for online research certification Turn in Research Project Idea
Sept. 19 Week 3	In-class demonstration of PubMed (Bring your computer to class) Lectures - The Research Problem/Research Questions and Hypothesis (Chapters 3 and 4) Levels of Evidence Examples of Class I, II, and III Articles, incl. Review Articles & Program Evaluation Articles	
Sept. 26 Week 4	Assignment Discussion – Literature Review How to Critique a Research Article AF Clip 2 Lectures - Validity in Research and Sampling/ Research Design (Chapters 5 and 6) Proper Citation vs. Plagiarism	
Oct. 3 Week 5	Quiz 1 - Basic Research Principles (questions from Weeks 1-4) Lecture - Descriptive Statistics: Describing Single Distributions (Chapter 7 Part I) Distribute Chapter 7 Practice Problems	Turn in Reference List
Oct. 10 Week 6	Discuss Chapter 7 Part I Practice Problems Lecture - Descriptive Statistics: Describing Single Distributions (Chapter 7 Part II) Assignment Discussion – Oral Presentation,	

	Powerpoint handout, and Poster formatting, printing, and display	
Oct. 17 Week 7	Discuss Chapter 7 Part II Practice Problems Lecture - Descriptive Statistics: Describing Multiple Distributions (Chapter 8 Part I) Distribute Chapter 8 Part I Practice Problems AF Clip 3	<i>Turn in Literature Review</i>
Oct. 24 Week 8	Discuss Chapter 8 Practice Problems Lecture – Placebo Effect in Research and Counseling Lecture - Reliability (Chapter 9 Part I) Distribute Chapter 9 Part I Practice Problems	
Oct. 31 Week 9	<i>Quiz 2 - Statistics I</i> (questions from Weeks 5-8, Chapters 7 & 8) Oral Presentations (2) Lecture - Reliability (Chapter 9 Part II) Distribute Chapter 9 Part II Practice Problems	<i>Oral presenters – provide Powerpoint handout for classmates and me</i>
Nov. 7 Week 10	Oral Presentations (4) Discuss Chapter 9 Part I Practice Problems Lecture - Inferential Statistics (Chapter 10 Part I) Distribute Chapter 10 Part I Practice Problems Assignment Discussion – Grant Proposal (handout with required grant format will be distributed in class) AF Clip 4	<i>Oral presenters – provide Powerpoint handout for classmates and me</i>
Nov. 14 Week 11	Oral Presentations (4) Discuss Chapter 10 Part II Practice Problems Lecture - Inferential Statistics (Chapter 10 Part II) Distribute and Discuss Chapter 10 Part II Practice Problems	<i>Oral presenters – provide Powerpoint handout for classmates and me</i>
Nov. 21 Week 12	<i>Quiz 3 - Statistics II</i> (questions from Weeks 9-11, Chapters 9 & 10) Oral Presentations (4) AF Clip 5	
Nov. 28 Week 13 (8:30-11am)	Lecture - Anatomy of the NCE Multiple Choice Test Question Review of Key Terms/Concepts for Final Exam Preview of CNS 770 (DSM)	<i>Turn in Grant Proposal</i>
Nov. 28 Week 13 (3:15-4:15pm)	Poster displays/discussion for 2 nd year students and faculty	Setup in DeTamble from 2:45-3:15pm <i>Provide handout of poster for classmates and me</i>
Dec. 5 Week 14	<i>In-Class Final Exam</i> (Closed book)	

Attachment 1: Instructions for Protection of Human Subjects Certification Assignment

Due Sept. 12 (Week 2), this assignment is designed to inform you about the rights and welfare of human participants in research. Begin the tutorial and online quizzes by going to citiprogram.org. Register as a new user. Follow these instructions:

- Step 1: Under “Participating Institutions”, select Wake Forest University
- Step 2: Create a username and password
- Step 3: Create a security question and answer
- Step 4: Enter your name
- Step 5: Enter your Wake Forest University email address
- Step 6: Answer “no” to question about CME/CEU credits
- Step 7: Answer “yes” or “no” depending on your preference, then submit
- Next: Complete information page required by Wake Forest University. Use your Wake Forest University email address, and select “Student Researcher – Graduate” for question about role in research. Submit.
- Next: Answer “Group 1” for the first question, “I have not previously completed an approved basic course” for the second question, and “Not at this time, thank you” for the third question. Submit.
- Next: Answer “No” to the next question.
- Next: At this time, you should come to a screen that has your name and ID# at the top. In the middle of the page, under the “My Courses” column, it should say “Group 1, Graduate Students, Faculty and Staff, Basic Course”. The very next column, “Status”, should say “Not started – Enter” in red letters. Click on “Enter”. Proceed with taking the “Required Modules” and then one of the “Elective Modules”.
- Last: As evidence of completion, turn in the printed certificate of completion at the beginning of class on Sept. 12

Attachment 2: Selected DSM-IV-TR Mental Health Diagnoses*

Agoraphobia
 Alcohol Use/Abuse/Dependence/Intoxication/Withdrawal
 Amphetamine Use/Abuse/Dependence/Intoxication/Withdrawal
 Anorexia Nervosa
 Asperger's Disorder
 Attention Deficit Hyperactivity Disorder
 Autistic Disorder
 Avoidant Personality Disorder
 Antisocial Personality Disorder
 Anxiolytic (Benzodiazepine) Use/Abuse/Dependence/Intoxication/Withdrawal
 Bipolar I Disorder
 Bipolar II Disorder
 Borderline Personality Disorder
 Bulimia Nervosa
 Cocaine Use/Abuse/Dependence/Intoxication/Withdrawal
 Conduct Disorder
 Delirium
 Dementia of the Alzheimer's Type
 Dementia Due to Creutzfeldt-Jakob Disease
 Dementia Due to Huntington's Disease
 Dissociative Identity Disorder
 Generalized Anxiety Disorder
 Insomnia
 Major Depressive Disorder
 Obsessive-Compulsive Disorder
 Obsessive-Compulsive Personality Disorder
 Opioid Use/Abuse/Dependence/Intoxication/Withdrawal
 Oppositional Defiant Disorder
 Panic Disorder
 Post-Traumatic Stress Disorder
 Schizotypal Personality Disorder
 Schizophrenia
 Sedative/Hypnotic/Anxiolytic (Benzodiazepine)
 Use/Abuse/Dependence/Intoxication/Withdrawal
 Tourette's Disorder

*Modified from American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., Text Revision). Washington, DC: Author.

Attachment 3: Literature Search Tips for PsycINFO and PubMed

Literature Search Strategies for PsycINFO:

Search Terms

1. Go to zsr.wfu.edu/ and click on “DATABASES” tab
2. Type in PsycINFO into keyword dialogue box, then click on PsycINFO, then click on Search.
3. Now click on PsycINFO. You will be prompted to sign in, which you should do. You will now be signed into PsycINFO.
4. Enter the mental health disorder that you wish to research then check the box that says “Suggest subject terms” (it is located just above dialogue box). Now click on the Search tab. You will now come to a thesaurus-like expansion of your mental health diagnosis. Write down 3-6 search terms that further describe the disorder you’ve chosen or different aspects of it. Click on each of these search terms to better define what you might want to research for your chosen mental health disorder. Try and come up with a final list of 3-6 search terms that you will employ in your literature search.

Literature (Citation) Search

5. Return to the PsychINFO homepage. Click on “Advanced Search”, located just under the dialogue boxes at the top of the page.
6. You will now need to select one, two, or three of your search terms in order to produce some research articles and other published documents on the mental health disorder you’ve chosen (a.k.a. citations). For example, if your disorder is depression, you could search “depression” or “depression and counseling” or “depression and suicide and counseling”. This is where you get into the art of doing literature searches ... how you combine terms makes a huge impact on the search outcome.
7. Place limits on your search, such as “Linked full text” and narrow the Publication Year from 2000 to 2011.
8. Your efforts should result in about 25 references. If you get more than this, either add additional search terms or narrow the Publication Year.
9. Click on the title of the citations that look interesting. Read the abstracts of about 25 citations. Choose a subset for your near-final reference list. Keep in mind you must also search PubMed for references, and between PsycINFO and PubMed, you should have 10-12 citations for your final reference list.
10. Be patient ... this is definitely a trial and error process for which practice makes perfect!

Literature Search Strategies for PubMed (note - PubMed does not have a search terms function like PsycINFO, so you’ll go straight to the Literature Search):

Literature (Citation) Search

1. Go to zsr.wfu.edu/ and click on “DATABASES” tab
2. Type in PubMed into keyword dialogue box, then click on MEDLINE - PubMed, then click on Search.
3. You may or may not be prompted to sign in (you may already be signed in from your PsycINFO search). Sign in if necessary.
4. Enter your desired search term(s) in the dialogue box. Do not click on the Search tab yet.

5. Just below dialogue box, click on Limits. Begin by searching for review articles for your mental health disorder. Set the following limits: Published in the Last - click on “10 Years”; Type of Article - click on “Review”; and Text Options - click on “Linked to Full Text”. Now click on the Search tab.
6. Click on the title of the citation to read the abstract. If the abstract inclines you to get the full article, explore Full Text Options in the upper right hand side of the page. If you look to the right of the citation title, there will be related articles that you can click on, read the abstracts, and get the full article. Another way to get related articles is to hit the back arrow until you come to the page which listed the multiple citations for the key words you entered. Below the citation title you’ll see the words “Related Articles”. Click on this ... it will produce a new list that shows you what other research articles have listed the citation you’re exploring.
7. Repeat the above process but remove the limit on the Type of Article (i.e., uncheck “Review”). This will give you a different array of citations related to your search terms.

Note: we’ll have a full demo of the literature searching process in class on Sept. 12 (Week 2).